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# **MEDICAL AND PHARMACEUTICAL NETWORK NEWSLETTER**

# February 2003

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Dear Colleagues,

Welcome to the first electronic Medical and Pharmaceutical Network Newsletter. We have changed to this method of distribution for a number of reasons, mainly the much lower cost, and also the lack of volunteers able to take a day or two off to produce a paper copy. I would like to thank Paul Gibson for all his time and effort in experimenting with conversion to .pdf format and uploading the Newsletter.

I'm sorry if this takes a very long time to download – the issue is larger than usual, and I'm going to try to produce smaller and more frequent newsletters. If you have any problems, or comments, please contact me on ps@pippasandford.com, or Paul Gibson on pmgibson@gibtrans.fsnet.co.uk.

I hope you won't find the change too disorienting, and will feel there are some advantages that compensate for losing the convenience of the old format. You will be able to open websites mentioned in the newsletter just by clicking on them, instead of having to retype them into your browser. If you use the Text Tool button (the third button from the right on the tool bar, with a T and a square on it), you can cut and paste information into your own documents on your computer, which means you search for specific terms from it from the Start menu. You will also be able to adjust font size to suit yourself.

On another subject, to improve the organisation of the Medical Network's database, the committee is intending to combine the categories of Affiliate, Subscriber and Student under the single heading of "Affiliate". This means that categories of membership will be FITI, MITI, Associate and Affiliate.

The next Medical Network workshop will be held on Wednesday 9 April 2003 at the Postgraduate Medical Education Centre of the Royal Surrey County Hospital in Guildford, when the speaker will be Dr. Paul Johnson, a maxillofacial surgeon at the hospital.

The last couple of newsletters have come out at six-month intervals, but I'm hoping to revert to producing them every three or four months again now. If anyone feels they could produce a short report of the next workshop, please contact me, and if anyone finds anything they think would interest other members, please send it in.

Best wishes Pippa Sandford

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Any opinions expressed in this newsletter are those of the individual and not of the Medical and Pharmaceutical Network as an organisation.

# Cystic Fibrosis workshop, held on February 22nd 2002- Terminology from the Danish group that arrived too late for the last newsletter *Contributed by Rob Williams*

Text: Spyttets mængde og sammansætning ved cystisk fibrose	

Line	Danish	English
1	spyt	saliva
5	undersøgelse	study
5	formål	purpose
6	kontrolpersoner	controls
6	alders- og kønsmatched	age- and sex-matched/gender-matched
7	transportmekanismer	transport mechanisms
9	calculusforekomst	prevalence of tartar
14	Generelt om cystisk fibrose	General information on cystic fibrosis
15	medfødte autosomalt recessive sygdom	congenital autosomal recessive disease
16	er bærer af genet	carries the gene
18	kromosom nr. 7	chromosome no. 7
18	epithelceller	epithelial cells
18	koder for	code for
18	transmembranprotein	transmembrane protein
19	under normal funktion	during normal function; when functioning normally
20	chlorid-kanal	chloride channel
21	gendefekt	gene defect
22	cellemembran	cell membrane
23	exokrint kirtelvæv	exocrine glandular tissue
24	sekretionshastighet	rate of secretion
26	patofysiologi	pathophysiology
26	bag ændringerne	underlying the changes
27	endnu ikke klarlagt	not yet clarified/explained/established
28	afficere	affect
29	multiorgandefekt	multi-organ failure
30	primært	primarily
30	svedkirtlerne	the sweat glands
30	spytkirtlerne	the salivary glands
31	sejt slim	sticky/viscous mucus
31	nedsat mucosal clearance	reduced mucosal clearance
35	iltoptagelse	oxygen uptake
36	fordøjelsessystemet	the digestive system
36	højviskøst sekret	highly viscous secretion
37	udførselsgangene	the efferent ducts
37	de secernerede fordøjelsesenzymer	the secreted digestive enzymes
38	tarmen	the intestine, the gut
42	ved anstrengelse	on exertion
44	kolinerg agonist	cholinergic agonist
45	sammenholdt med	together with; in conjunction with
46	kronisk obstruktiv lungesygdom	chronic obstructive lung disease
46	familiær disposition	familial predisposition
46	pancreasinsufficiens	pancreatic insufficiency
50	normal ernæringstilstand	normal nutritional condition
50	antibiotisk behandling	antibiotic therapy

51	i perioder intravenøst	at times intravenously
51	lungefysioterapi	chest physiotherapy; physiotherapy for the lungs
54	lungebetændelse	pneumonia
54	underernæring	malnutrition
55	den forventede levetid	life expectancy
57	genterapi	gene therapy
57	medikamenter	drugs; medicines
58	der virker antiinflammatorisk	which have an antiinflammatory effect
59	genoprette ionbalancen	re-establish the ion balance
61	mundhulen	oral cavity
62	cariesforekomst	incidence of caries
64	ikke afdækkede	not discovered; not clarified
65	systemiske antibiotikabehandlinger	systemic antibiotic treatments
66	kost- og vejrtrækningsvaner	dietary and respiratory habits
64	søges bl.a. grundet i, at de	causes may be that the
68	sukkerindtag	sugar intake
73	stimuleret helspyt	stimulated whole saliva
73	opsamlet under paraffindække	collected under paraffin seal
79	gl. parotis	parotid gland
79	gl. submandibularis	submandibular gland
88	manglende evne	inability
89	kraftig stimulering	powerful stimulation
89	raske mennesker	healthy persons/individuals/subjects
106	markant	markedly; noticeably; considerably
111	de små glandler	the minor glands
115	læbespytkirtler	labial glands

# Electrocardiograms

Summary of a talk given by Dr. Nicky Drake, Specialist Registrar, Accident and Emergencies, Kingston Hospital, Kingston-upon-Thames on 25th October 2002

Nicky Drake is an Accident and Emergency doctor rather than a cardiologist, and her talk reflected her very pragmatic approach to ECGs; as she remarked, A&E doctors deal with the emergency, and then pass the patient on to someone else. She defined what an ECG is, explained the electrical activity it represents, showed us where the electrodes are applied, and how they relate to an ECG (using a volunteer from the Network – David Weeks had kindly volunteered to have an ECG done at the workshop). Nicky then showed us how to read and interpret ECGs, including abnormal ones.

An ECG is a physical picture of the electrical activity of the heart. We know what the normal picture should look like, so if it looks different, we can tell that there are disease processes present. The ECG is produced using 12 leads, which are not the same thing as the wires placed on the body; leads are different viewpoints of the heart's electrical activity. So on an ECG you have twelve leads, and on the machine you have ten wires. Six wires go on the front, and four wires on the limbs.

An electrical process makes all muscle cells contract. The inside of the cell has a positive charge, and the outside is negative. In the heart, a wave of depolarisation suddenly reverses the charge across the membrane, so the inside becomes negative and the outside becomes positive. Then it resets itself; this is called repolarisation. The ECG is basically the sum total of all the electrical activity that is going on in the heart.

Each lead looks at a different part of the heart. The V leads are also known as the chest leads, and they look at the heart in a horizontal plane.

The four limb electrodes create six limb leads: I, II, III, aVR, aVL, and aVF. They look at the heart in the vertical plane, and are used to establish axis. Axis is not the position in which the heart is lying; it is the axis along which depolarisation occurs. Always looking from the front of the heart, axis is the average direction of the wave of depolarisation. In a normal healthy heart the axis goes from about eleven o'clock down to five o'clock. In some conditions it gets moved around – certain conditions cause right axis deviation, and certain conditions cause left axis deviation.

Nicky pointed out that although the limb leads are marked "legs and arms" on the diagram, they do not necessarily have to be put on the legs and arms; they can go on the torso, on four points that are away from the heart.

At the bottom of the ECG chart there is one long line, which by tradition is recorded from II2, because that lead is the one that shows the P waves the best. The P waves are very important for looking at the rhythm.

The first bump you come to is the P wave, which represents atrial conduction, a wave of depolarisation going through the atrium which leads to contraction. Nicky pointed out that the P wave does not necessarily mean atrial contraction, it only shows electrical activity; to know if the atrium is contracting, you have to look at the patient to see if they have a pulse.

The next bit is the PR interval – in a normal heart, the length of the PR interval tells us how long it takes for the wave of depolarisation to get from the atrium to the ventricles. In some conditions it is delayed, and the PR interval is lengthened. There are also conditions where it is actually too short, in which case PR interval is shorter. The normal length is 3–5 small squares; Nicky explained that you talk about large and small squares on an ECG mainly because it is much easier than talking about milliseconds. Each of the squares represents a certain amount of time – each of the large squares represents 0.2 of a second, so one second is five of these large squares.

The next bit is the Q wave – the whole thing is the QRS complex, although not every QRS necessarily has a Q wave. You call it a Q wave if the first deflection is downwards. If the first deflection is upwards, then you call it an R wave. If you do not have a Q, it does not necessarily mean there is anything wrong. Qs are there sometimes, and sometimes they are not. There are always R waves. PR interval is from the start of the P wave to the start of the Q wave.

The next deflection downwards is the S wave.

The P wave represents atrial conduction, or depolarisation in the atria, which should lead to contraction in the atria; the QRS is depolarisation in the ventricles, which should lead to ventricular contraction. The QRS is much bigger than the P wave because there is more muscle mass, so it causes a much bigger deflection.

The next bit is the ST segment, which tells you whether the patient has had a myocardial infarction, or whether they have ischaemia or angina. It starts at the end of the S wave and goes on to the beginning of the T-wave.

The next bit is the T-wave, which is ventricular repolarisation.

The atria are also repolarised, but this happens while the QRS is going on, so it is hidden, because the QRS is such a huge muscle mass and causes such a big deflection.

Another interval we need to know about, which can be very important in real life, is the QT interval, from the start of the Q wave to the end of the T wave.

QRS complexes are normally narrow – if the width is increased, that is a sign that there is a disease process going on in the heart. The normal width of the QRS is up to two and a half small squares.

The electrical activity starts at the sinoatrial node, which is a collection of very specialised conducting tissue which can discharge spontaneously and start the whole process off. The SA node normally discharges at the rate of about 70 a minute. Once it has discharged, the wave of depolarisation spreads

out over both the atria and forces them to contract. It then goes down to the atrioventricular node, which is another area of specialised tissue which again can discharge by itself spontaneously, but it does not do that unless the sinoatrial node has failed for some reason. When it does discharge spontaneously, it goes at a slower rate of about 50 or 60 a minute. From there the wave goes down to the bundle of His; the bundle of His is normally the only electrical pathway between the atria and ventricles.

From the bundle of His, the conduction system splits into two. There is a right bundle branch, which goes off to supply the right ventricle, and a left bundle branch, which goes off to supply the left ventricle.

The left bundle branch is much more complicated, because it actually splits up again into two fascicles: one goes to the front of the heart, the anterior fascicle; and the posterior fascicle goes to the back of the left ventricle.

Once the electrical activity has got through the bundle branches, it spreads out through specialised conducting tissue called Purkinje fibres into the ventricular muscle, causing it to contract.

The pacemaker of the heart is whatever is going the fastest; if there is an abnormal pacemaker somewhere else in the heart going faster than the sinoatrial node, it will take over conduction. You can work out from the width of the QRS complex how distal the location is that the depolarisation is starting from – the broader it is, the more distal the place where the depolarisation is starting. A broad QRS can also indicate a delay in conduction.

Nicky then showed us how to interpret an ECG.

First you check the rate of the heart, in beats per minute. Nicky showed us an ECG of sinus tachycardia; the sinus part is because the depolarization started at the SA node and went through the normal pathway; and the tachycardia part means it is fast. The normal rate of the heart is conventionally between 60 and 100 beats a minute, but that has to be related to the age of the patient, the circumstances that the patient is in (whether they are in pain, and so on), and also their fitness, because a very fit person has a slower heart; when their heart is trained, it pushes out more blood with each stroke, so they do not have to beat as fast as anyone else.

A slow sinus rhythm would be sinus bradycardia, which means it is normal, but slow. The term sinus arrhythmia is used to indicate that the sinus rhythm may not be strictly regular. There is a gradual variation in the length of time between PR waves, because the nerves that supply the heart also supply the lungs, and as you breathe in and out your heart rate gets slightly quicker and slightly slower, which is what sinus arrhythmia is. In terms of the ECG it is irrelevant really, as it is really too short to see; there is just a very slight variation as the patient breathes in and out.

Someone asked about the difference between arrhythmia and dysrhythmia. Nicky felt that while there may technically be a difference in definition, they tend to be used interchangeably.

P waves – when you look at P waves, you need to know they are the right size and shape. There is no normal range for the P wave, but if it looks huge compared to the QRS, then it is huge. Basically, big P waves mean right atrial hypertrophy, which means the muscle cells in the right atrium have got bigger. The number of cells has not increased, they are just bigger. Sometimes you have a bifid P wave, which means it has a notch; that means there is left atrial hypertrophy. Every P wave should be followed by a QRS.

Then you look at the PR interval, to see how long it is – is it short, is it long?.

Then you look at Q waves, to see whether or not they are there, and if they are, whether or not they are normal. If the Q wave is bigger than two small squares, it is significant; that usually means the patient had an infarction in the past.

Then you look at the QRS complex to see how big it is, and how big the deflection is; if there is hypertrophy of the ventricular muscle you have a much bigger deflection. You look at the width of it, to establish whether there is a delay in conduction, if the focus is arising in the ventricles.

Then you look at the ST segment, to see if it is elevated or depressed. If the ST segment is elevated, it is above the isoelectric line. There are many different forms of ST elevation. The most significant one is myocardial injury – trauma, myocardial infarction or pericarditis. ST depression means the opposite – that means ischaemia.

We then had a practical demonstration of all this. Nicky had brought along an ECG machine, and David Weeks had very kindly volunteered to be the guinea pig. The whole process took only a few minutes, including a number of reminders to David to stay relaxed as he sat covered in electrodes in front of 50 or so of his colleagues, who were waiting to interpret his ECG for him.

After lunch, Nicky talked about abnormal ECGs and the various conditions that cause them.

First, we looked at problems of conduction, in the form of delayed or blocked conduction, problems of rhythm, problems with P waves, QRS complexes, or T waves.

Nicky started with problems of conduction. The first ones were heart blocks.

Heart blocks come in a range of severity, with first-degree being the least severe, and third-degree the worst.

First-degree heart block means there is a delay in conduction down the pathway, but every one does get through. So each P wave is followed by a QRS, but it takes longer to get there. The PR interval is wider than usual. So with first-degree heart block, PR interval is prolonged, and every P wave is followed by a QRS. It is just a delay, and is clinically irrelevant. The only important thing is to find out why have they this delay; in developed countries it is usually because they have ischaemic heart disease, which can progress over time to the more serious heart blocks. You don't have to do anything about it, you just have to be aware of it.

Second-degree heart blocks – this means there is intermittent blocking between the atria and the ventricles. There are three varieties of this intermittent blocking – three types of second-degree heart block.

The first one is also called Mobitz type I, or Wenckebach phenomenon.

On the ECG you can see there is a QRS complex missing, and there is a P wave on its own. The PR intervals got longer, and longer and longer – and then there was one missing. So you have delay; delay getting worse; delay getting a lot worse; delay really bad; and then a complete block.

This one is also not clinically significant at all, except that it might progress. The patient would be unaware of it, as it is completely asymptomatic.

The next type is called Mobitz type II second-degree heart block; in this case, you get occasional dropping of the beat. The PR interval is the same length all the time, then all of a sudden there is a complete block. So you do not get the gradual lengthening. Mobitz II is an indicator that the patient may suddenly go into a worse rhythm. This one is clinically significant; the patient will need more investigation to see if they are likely to progress to a worse rhythm. You might see it in a patient who comes in having fainting attacks. If you see an ECG with second-degree heart block, you have to refer the patient to a cardiologist to be checked out, so they can have 24-hour cardiac monitoring to see if they are going into a worse rhythm when they faint.

The third type of second-degree heart block is where you have alternate conduction and nonconduction, so there are more P waves than QRS complexes. You can have 2:1 (pronounced as two to one) block, where one P wave is not conducted, while the next one is. You can have 3:1 block or 4:1 block, depending how many more P waves there are than QRS complexes. The type of block does not have a special name, but it is second-degree heart block where you get alternate conduction and nonconduction. This is also one that is not medically significant.

Mobitz II is the one that you worry about, and the rhythm that it goes into if it gets worse is called complete heart block. Nicky showed us an ECG which looked as if it had P waves that were conducting, but the QRS complexes were very, very slow. There was no electrical connection at all between the atria and the ventricles; this is called ventricular escape. The atria are doing their own

thing, and the ventricles are doing their own thing, with no connection between the two. If they are completely regular, you have complete heart block. You can see why the patient is feeling ill, as their heart is going along at 40, or even 30 beats a minute, where normally it would be going along at 70, which means there is not enough blood going to where it is needed. They might be unconscious, or they might have such a poor blood circulation going round that it cannot supply enough blood to their heart. They might have central chest pains, or be sweaty and grey and clammy. These people need pacing.

The reason it is so dangerous is that although this patient might be ill and not dead, if you let it go on, the heart will not be getting the perfusion that it needs, so it will gradually slow down and slow down and slow down, and then it will stop altogether.

Another problem of conduction we looked at was bundle branch block. Nicky showed us how to relate the pattern on the ECG for particular leads to what was happening in the heart. There is an extra complication with bundle branch blocks. The left bundle divides into two, an anterior fascicle and a posterior fascicle. Conduction may be blocked in the right bundle branch and in the anterior fascicle of the left bundle branch, leaving only the posterior fascicle available for conduction. This is what is called bifascicular block.

We next looked at problems of rhythm. Normally, depolarisation starts at the SA node and goes all the way down the pathway; that is sinus rhythm. You can also have sinus tachycardia or sinus bradycardia. You can get rhythms that start more or less anywhere else in the heart, wherever is depolarising fastest, and abnormal rhythms start in other places in the heart. We name them according to where they start. So if you get an atrial focus, and it is fast, you have an atrial tachycardia. If you have a ventricular focus, and it is fast, you have a ventricular tachycardia. When abnormal foci are starting conduction, and it is slow, the rhythms are called escape rhythms rather than bradycardia. You can have a junctional escape rhythm, or a ventricular escape rhythm, which is very slow, about 40.

You can also have early beats arising from abnormal atrial, junctional or ventricular foci, anywhere in the heart. These are called extrasystoles or ectopics. They are called ectopic as they are not starting in the normal place for depolarisation to start.

We looked at an ECG which was basically sinus rhythm, but with an atrial ectopic beat; it was called atrial ectopic because the depolarisation started in the atrium. One ventricular ectopic on its own is irrelevant, but if you have a lot of them together, that is dangerous.

All these abnormal foci can lead to very fast rhythms; for example, an atrial tachycardia is when the atria themselves are beating very fast, usually at a rate of about 150 beats per minute. If it goes over about 200, then not every impulse is able to be conducted all the way down normally, so there are lots of P waves, which show the atrial conduction, but not all are conducted down, so there are not the same number of QRS complexes. If the rate goes over 250, you see no straight line between the P waves at all, and a saw tooth pattern on the ECG, which is called atrial flutter, which is a type of atrial tachycardia. The atria are going very fast, and some of the impulses are being conducted down to the ventricles, and some are not.

Fibrillation is when each of the muscle cells is contracting on its own in its own way, so there is no real contraction of the atria at all.

Atrial flutter is a supraventricular tachycardia – there is a whole group of supraventricular tachycardias (SVT), sinus, junctional, or nodal, or atrial. Normally, an SVT will refer to junctional tachycardia.

If the ventricles are going fast, between 200 and 300, that is ventricular tachycardia. This is one of the rhythms you see in cardiac arrest, when there is no pulse because it is going so fast the heart cannot fill up with blood, so it is unable to push it forward, so you have no pulse at all.

There are a few other cardiac arrest rhythms; one is called asystole, also called flat-lining, although asystole is never a completely straight line - a completely straight line means that one of your leads has gone.

The usual treatment for these completely disorganised cardiac arrest rhythms is to shock the heart back into a normal rhythm, and Nicky gave us a graphic description of a number of ways in which this can be done, by stimulating the vagus nerve, sometimes using carotid sinus massage or a Valsalva manoeuvre, or pressing on the eyeballs. If that fails, there are drugs that can be used, such as adenosine. If that fails, you do cardioversion. This is not the same thing as defibrillation, because this is not a fibrillating heart. For small children, you can dunk their head in ice cold water – "but you have to warn the parents before you start".

Another cardiac arrest rhythm is called EMD or electromechanical dissociation, though we are supposed to use the American term now, PEA, or pulseless electrical activity (if you watch ER, they talk about PEA; if you watch Casualty, they talk about EMD). The ECG on the cardiac monitor looks as if it should have a pulse, but it doesn't have one. What is happening is that electrical conduction is going on normally, but for some reason the muscles cannot contract; this is dissociation. It is exactly what it says, pulseless electrical activity. It can be caused by a number of conditions; for example, if you have a big myocardial infarction, it will kill all your muscle cells, and they cannot contract when they are dead. So there is electrical activity, but the heart cannot contract.

In atrial fibrillation, all of the muscles in the atrium are all contracting away and ignoring each other. Some of the electrical activity will be conducted down the normal pathway, so every now and again there will be a normal thin narrow QRS, but they are not regular, and there is no pattern to them. The AV node is continually getting bombarded with conducting electrical pulses, and it will conduct some but not others. So there are no P waves, there is no co-ordinated repolarisation of the atria, there are some normal thin QRS complexes, and the rhythm is irregular. If you have no P waves, an irregular rhythm, and the QRS complexes are thin, that is atrial fibrillation.

We looked at what happens in different sorts of infarct. When someone is having an infarction, you see opposite things happening in the opposite leads, which is called reciprocal change. It is not a mirror image; there is ST depression on the other side of the heart. So ST elevation with ST depression in the opposite lead is diagnostic of an infarct.

Posterior infarcts are very hard to spot because none of the leads on the ECG looks at the back of the heart. What you get is the opposite sign on V1; so if you see ST depression in V1, you have put an electrode on the patient's back and do another ECG, and then you should see ST elevation.

After Nicky had finished, the meeting continued as usual with several groups working on prepared translation texts from French, German, Spanish and Danish. Nicky stayed to help us and comment on specific problems. The whole afternoon was an invaluable introduction to a very complex subject.

-PS

# Two useful books about ECGs:

Making sense of the ECG: A Hands-on Guide, by Andrew R Houghton and David Gray Paperback - 268 pages © 1997, reprinted 1998 with updated material. Arnold; ISBN: 0340676574

The ECG made easy – John Hampton, Professor of Cardiology, University of Nottingham, ISBN 0443072523, Churchill Livingstone · 6th edition due to be published March 2003

# Some useful websites:

http://medlib.med.utah.edu/kw/ecg/ecg\_outline/Lesson2/index.html#conduction A diagram of the conduction system of the heart

http://cal.nbc.upenn.edu/lgcardiac/ecg\_tutorial/qtinterval.htm ECG chart with the various segments marked http://www.themedstud.com/ecg/index.html A very clear online tutorial

http://www.nottingham.ac.uk/pharmacy/undergraduate/BMSundergrad/PHARMACY/LaboratoryBoo k/LC7.pdf Diagrams of the various leads

Nicky Drake's glossary, with French and German terms contributed by Karin Band:

	Glossary of terms (MTW on ECG)	
(English w. definitions – French – German – Latin) <i>Italics</i> = unofficial nomenclature; [occ] = occasional usage; [n.r.] = not recommended; [spec] specific usage Official Latin = Terminologia Anatomica)		
Anterior	Describes an object's position in relation to another and means the object is in front of the other. Fr: antérieur. G: anterior; ventral; Vorder-; [spec] anterior infarction = Vorderwandinfarkt.	
Asystole	A cardiac arrest rhythm where there is no activity of the ventricles at all. Fr: asystole. G: Asystolie.	
Atrial septum	<ul> <li>The muscular wall which lies between the right and left atria.</li> <li>Fr: septum interatrial; <i>septum interauriculaire</i>; <i>cloison interauriculaire</i>.</li> <li>G: Vorhofseptum; Vorhofscheidewand.</li> <li>L: Septum interatriale.</li> </ul>	
Atrioventricular node	<ul> <li>AV node. Part of the specialised conducting tissue of the heart, also within the right atrium. Depolarisation spreads to this node from the atrial myocardium, then from here it spreads to the bundle of His. If the SA node fails it can take over as the pacemaker of the heart usually at a rate of 50-60/min.</li> <li>Fr: noeud atrioventriculaire; <i>noeud auriculo-ventriculaire</i>; <i>noeud d'Aschoff-Tawara</i>.</li> <li>G: Atrioventriularknoten; AV-Knoten; [occ] Aschoff-Tawara-Knoten.</li> <li>L: Nodus atrioventricularis.</li> </ul>	
Atrium	One of the two smaller chambers of the heart. Fr: atrium; <i>oreillette</i> [still the more common term]. G: Vorhof. L: Atrium cordis.	
Axis*	The average direction of spread of depolarisation through the ventricles as seen from the front. Normally goes in the 11 o clock to 5 o clock direction, causing upward deflection in leads I, II & III, greater in II than in leads I or III. Expressed as a vector, normal cardiac axis is defined as between -30 and +90 degrees.	

Fr: axe (électrique); Â QRS. G: Herzachse. **Bifascicular block** Delay in conduction through the right bundle branch and the left anterior fascicle. The ECG will show right bundle branch block and left axis deviation. This ECG pattern indicates widespread damage to the conducting system. Only the left posterior fascicle is functioning. If this blocks also, complete heart block will occur. Fr: bloc bifasciculaire. G: bifaszikulärer Block A heart rate less than 60/min in an adult. **Bradycardia** Fr: bradycardie. G: Bradykardie. **Bundle branch block** Delay in conduction through one of the right or left bundle branches. It causes characteristic widening of the QRS complex. Fr: bloc de branche. G<sup>•</sup> Schenkelblock **Bundle branch** Specialised conducting tissue within the ventricular septum. The bundle of His divides into right and left bundle branches. The left bundle branch divides into two (anterior and posterior) fascicles. The wave of conduction passes down the bundle branches to the Purkinje fibres within the ventricular muscle mass. Fr: branche (du faisceau de His). G: Schenkel (des His-Bündels); Tawara-Schenkel. L: Crus (fasciculi atrioventricularis) [Crus dextrum fasciculi atrioventricularis; Crus sinistrum fasciculi atrioventricularis]. **Bundle of His** The single normal path of conduction between the atria and ventricles, which lies in the ventricular septum. Depolarisation runs from the AV node though the bundle of His, and on to the Purkinje fibres. Fr: faisceau atrio-ventriculaire; faisceau de His. G: His-Bündel; His'sches Bündel. L: Fasciculus atrioventricularis. **Cardiac arrest** A clinical state where a patient has no pulse and is in a state of collapse. The three cardiac arrest rhythms are: asystole, ventricular tachycardia/ventricular fibrillation and pulseless electrical activity. Fr: arrêt cardiaque. G<sup>·</sup> Herzstillstand How much blood the heart pushes out in one minute. It equals stroke **Cardiac output** volume x heart rate. Fr: débit cardiaque. G: Herzzeitvolumen HZV; Herzminutenvolumen HMV; Herzauswurfleistung. **Chest leads** Electrodes which look at the heart in a horizontal plane. Also known as praecordial leads or v-leads. Fr: dérivations précordiales.

	G: Brustwandableitungen.
Conduction defects	Delay or block to the wave of depolarisation anywhere from the SA node down to the bundle branches. Fr: troubles de la conduction (de l'influx). G: Erregungsleitungsstörungen.
Depolarisation	Cardiac muscle cells are polarised – a difference of 90mv exists between the interior of the cell (positively charged) and the extracellular space. Reversal of this electrical charge (depolarisation) leads to calcium entry and is responsible for contraction of myocardial muscle cells. Fr: dépolarisation. G: Depolarisation; Depolarisierung; Erregungsbildung.
Distal	Describes an object's position in relation to another when the objects follow a linear course and means the object is further away from the start than the other. Fr: distal. G: distal; [spec] herzfern.
EMD	See PEA
Endocardium	The thin lining inside the heart. Fr: endocarde. G: Endokard; Herzinnenhaut. L: Endocardium.
Fascicle	One of the divisions of the left bundle branch into left and right fascicles. Fr: Faisceau (antérieur ou postérieur). G: Faszikel [m]; Strang (anteriorer bzw. posteriorer).
First degree heart block	Delay in conduction between the SA node and the ventricles leading to a constantly lengthened PR interval. Fr: bloc auriculo-ventriculaire ([o:] atrio-ventriculaire) (du) premier ([o:] 1 <sup>er</sup> ) degré. G: AV-Block 1. Grades.
Heart block	Particular types of conduction defects, divided into first, second, and third degree. Fr: bloc auriculo-ventriculaire; bloc atrio-ventriculaire BAV. G: AV-Block; atrioventrikulärer Block.
Hypertension	Increase in blood pressure. Fr: hypertension; [arterial =] hypertension artérielle HTA. G: Hypertonie; Hypertonus; [n.r.] Hypertension; (Blut)hochdruck.
Hypertrophy	Increase in size of individual muscle fibres. Fr: hypertrophie. G: Hypertrophie.
Hypotension	Decrease in blood pressure. Fr: hypotension artérielle.

	G: Hypotonie; niedriger Blutdruck.
Inferior	Describes an object's position in relation to another and means the object is below the other. Fr: inférieur. G: inferior; Unter-; [spec:] inferior infarction = inferiorer Hinterwandinfarkt; Hinterwandinfarkt.
Lateral	Describes an object's position in relation to another and means the object is further from the midline than the other. Fr: latéral; <i>externe</i> . G: lateral; seitlich; [occ] Außen-; [spec] lateral infarction = Seitenwandinfarkt.
Left anterior hemiblock	Same as left anterior fascicular block. Fr: hémibloc antérieur gauche HBAG. G: linksanteriorer Hemiblock; linksanteriorer Faszikelblock.
Left axis deviation*	The cardiac axis is less than -30 degrees, i.e. it swings to the left. Causes include left ventricular hypertrophy, conduction defects, some Wolf-Parkinson-White syndrome, inferior wall infarction, left anterior hemiblock etc. Fr: déviation axiale gauche DAG. G: überdrehter Linkstyp.
Limb leads	Standard leads. Fr: dérivations des membres; dérivations périphériques. G: Extremitätenableitungen.
Medial	Describes an object's position in relation to another and means the object is nearer to the midline than the other. Fr: médial; <i>interne</i> . G: medial; [occ] Innen
Mobitz 1 heart block	A second degree heart block. Fr: bloc auriculo-ventriculaire ([o: atrio-ventriculaire) de type Luciani-Wenckebach; périodes de Wenckebach; phénomène de Luciani Wenckebach; [occ] BAV du type I de Mobitz ([o:] de type Mobitz I); BAV Mobitz I. G: AV-Block II. Grades Typ 1 nach Mobitz; Wenckebach-Periode; Wenckebach-Periodik; [occ] AV-Block Wenckebach. Note: In French, 'Mobitz' is frequently found mis-spelt 'Möbitz'.

Mobitz 2 heart block	A second degree heart block. Fr: bloc auriculo-ventriculaire ([o: atrio-ventriculaire) du type II de Mobitz ([o:] de type Mobitz II); BAV Mobitz II. G: AV-Block II. Grades Typ 2 nach Mobitz. <u>Note</u> : In French, 'Mobitz' is frequently found mis-spelt 'Möbitz'.
Myocardial infarction	Death of cardiac muscle usually due to critical ischaemia. Fr: infarctus du myocarde IDM. G: Herzinfarkt.
Myocardium	The muscle wall of the heart. Fr: myocarde. G: Myokard; Herzmuskel. L: Myocardium.
P wave	Part of the ECG which represents atrial depolarisation. Fr: onde P. G: P-Welle; P-Zacke; Vorhofzacke.
Pericardium	The fibrous sac within which the heart lies. Fr: péricarde. G: Perikard; Herzbeutel. L: Pericardium.
Posterior	Describes an object's position in relation to another and means the object is behind the other. Fr: postérieur. G: posterior; dorsal; Hinter- [spec:] <b>posterior infarction</b> = hoher Hinterwandinfarkt; Infarkt der freien Hinterwand; reiner Hinterwandinfarkt.
PR interval	Represents the time taken by the spread of depolarisation from the SA node to the ventricular septum. It is not usually greater than 0.2secs (3-5 small squares) It is measured from the start of the P wave to the start of the QRS complex. Fr: intervalle PR; intervalle PQ; espace PR; espace PQ. G: PQ-Zeit; PQ-Dauer; PQ-Intervall; PR-Intervall.
Praecordial leads	Chest leads.
Proximal	Describes an object's position in relation to another when said objects follow a linear course and means the object is nearer the start than the other. Fr: proximal. G: proximal; [spec] herznah.
Pulmonary	Pertaining to the lungs. Fr: pulmonaire. G: pulmonal; Lungen <u>Note</u> : The adjective <b>pulmonic</b> is common in AmEn texts, in relation to the valve between the right ventricle and the pulmonary artery: 'pulmonic valve'; 'pulmonic (valve) stenosis'; 'pulmonic area (of auscultation)'.

Pulseless electrical activity	<ul> <li>PEA. A cardiac arrest rhythm where the monitor shows a rhythm you would associate with having a pulse, yet the patient has no pulse.</li> <li>Previously known as EMD or electromechanical dissociation.</li> <li>Fr: activité électrique sans pouls AESP; dissociation électromécanique DEM.</li> <li>G: pulslose elektrische Aktivität PEA.</li> </ul>
Purkinje fibres	Specialised conducting fibres within the ventricular muscle which allow depolarisation to spread from the bundle branches to the ventricular muscle. Fr: fibres de Purkinje; réseau sous-endocarditique de Purkinje; système de Purkinje. G: Purkinje-Fasern. L: Rami subendocardiales cruris dextri/cruris sinistri fasciculi atrioventricularis.
QRS Complex	Part of the ECG which represents ventricular depolarisation. Fr: complexe QRS; [occ] onde QRS. G: QRS-Komplex; Kammeranfangsgruppe.
QT interval	Measured from the start of the QRS complex to the end of the T wave. Should be less than 440ms (11 small squares) Fr: intervalle QT; durée de QT. G: QT-Intervall; QT-Dauer; Gesamtkammerkomplex.
Repolarisation	The reverse of depolarisation. Fr: repolarisation. G: Repolarisation; Erregungsrückbildung.
Right axis deviation*	The cardiac axis is greater than +90 degrees, ie swings to the right. Causes include right ventricular hypertrophy, pulmonary embolus, anterolateral infarction etc. Fr: déviation axiale droite. G: Rechtstyp [= 90° - 120°], überdrehter Rechtstyp [= $+120^{\circ}150^{\circ}$ ].
Second degree heart block	<ul> <li>Block to conduction between the SA node and ventricles intermittently. There are 3 variations.</li> <li>Mobitz 1 or Wenkebach phenomenon where there is delay in conduction between SA node and ventricles leading to gradually increasing PR interval and then a dropped beat.</li> <li>Mobitz 2 where there is a constant PR interval and this is sometimes not conducted.</li> <li>Alternate conducted/not conducted pattern: 3:1 or 2: 1.</li> <li>Fr: bloc auriculo-ventriculaire ([o:] atrio-ventriculaire) (du) deuxième ([o:] 2ème) degré.</li> <li>G: AV-Block 2. Grades.</li> </ul>

Sinoatrial node	<ul> <li>SA node. A specialised collection of cells within the right atrium which initiates the electrical discharge for each cardiac cycle. It discharges at a rate of 70 /min.</li> <li>Fr: noeud sinu-atrial; noeud sinusal; <i>noeud de Keith et Flack</i>.</li> <li>G: Sinusknoten; [occ] Keith-Flack-Knoten.</li> <li>L: Nodus sinuatrialis.</li> <li>English Terminologia Anatomica = sinu-atrial node</li> </ul>
Sinus rhythm	The normal rhythm of the heart. Each P wave is followed by a QRS. Fr: rythme sinusal. G: Sinusrhythmus.
Standard leads	Electrodes which look at the heart in a vertical plane. Also known as limb leads. Fr: dérivations "standard"; dérivations bipolaires. G: Standardableitungen (nach Einthoven).
Stroke volume	How much blood the heart pushes out per contraction. Fr: débit systolique. G: Schlagvolumen.
ST segment	Measured from the end of the QRS complex to the start of the T wave. May be elevated or depressed. Is normally isoelectric. Fr: segment ST; espace ST. G: ST-Strecke; ST-Segment.
Superior	Describes an object's position in relation to another and means the object is above the other. Fr: supérieur. G: oberer/e/es; oberhalb; superior.
T Wave	Part of the ECG which represents ventricular repolarisation. Fr: onde T. G: T-Welle; Endschwankung.
Tachycardia	A heart rate greater than 100/min in an adult. Fr: tachycardie. G: Tachykardie; Herzjagen; Herzrasen.
Ventricle	One of the two larger chambers of the heart. Fr: ventricule. G: Ventrikel; Herzkammer. [ <u>Note</u> : Since 'Herzkammer' = 'ventricle, 'chamber' = 'Herzbinnenraum' – which may be either an atrium or a ventricle.] L: Ventriculus cordis.
Ventricular fibrillation	A cardiac arrest rhythm where each ventricular muscle fibre contracts individually and there is no cardiac output. Fr: fibrillation ventriculaire. G: Kammerflimmern.

Ventricular septum	<ul><li>The muscular wall between the right and left ventricles.</li><li>Fr: septum interventriculaire; <i>cloison interventriculaire</i>.</li><li>G: Ventrikelseptum; Kammerseptum; Kammerscheidewand.</li><li>L: Septum interventriculare.</li></ul>
Ventricular tachycardia	A rhythm arising from the ventricles and over a rate of 120/min. It can be pulseless or pulsed. If the patient has no pulse they are in cardiac arrest. Fr: tachycardie ventriculaire. G: Kammertachykardie; ventrikuläre Tachykardie.
V leads	Chest leads.
Wenckebach nhenomenon A sec	ond degree heart block same as Mobitz 1

Wenckebach pnenomenon A second degree neart block, same as Mobilz 1.
Fr: bloc auriculo-ventriculaire ([o: atrio-ventriculaire) de type Luciani-Wenckebach; périodes de Wenckebach; phénomène de Luciani Wenckebach;.
G: Wenckebach-Periode; Wenckebach-Periodik; [occ] AV-Block Wenckebach.

\* At the Workshop, an A3 sheet with additional information (including French and German definitions and diagrams of axis deviation) was distributed. The German diagram, in particular, may be useful, since it shows the complexity of the terminology used by cardiologists in the German-speaking countries. Colleagues who were not at the Workshop may obtain a spare copy by sending a self-addressed envelope to K. Band.

# <u>Terminology from German text supplied for the ECG Workshop - as confirmed by a bilingual</u> <u>cardiologist</u>

Contributed by Maggie Hook

Line 6	Heterotopic Erregungsbildungs- störungen	Ectopic depolarisation disorders
Line 10	völlig unregelmässiger Kammerschlagfolge	irregularly irregular ventricular rhythm
Line 17	absolute Arrhythmie	"absolute arrhythmia" not used in English (arrhythmia is chronic/persistent/paroxysmal) best translated here as: atrial fibrillation with
irregular		ventricular rate
Line 27	frustranen Kontraktionen	ineffective contractions
Line 44	Karotisdruckversuch	carotid sinus massage
Line 54	Kammerflattern	ventricular flutter
Line 68	Absterbeflimmern	terminal fibrillation
Line 88	Sinusgrundperiode	basic/underlying sinus rhythm or P-P interval
Line 101	PQ Zeit	P-R interval ("P-Q interval" never used in English, even though, if there is a Q wave before the R wave, one would in fact measure the P-Q interval)
Line 101	R-Zacke (Delta-Welle)	Delta wave on the R-wave upstroke. (Accessory pathway starts to depolarise the ventricles before

the normal transmission (delayed through the AV node) catches up. The delta wave represents the early depolarisation started from the accessory pathway, followed by normal depolarisation, i.e. the delta wave and the normal R wave of the QRS complex merge. The premature depolarisation appears to shorten the normal P-R interval (hidden by the delta wave).

Line 111 QRS Ausschlagrichtung

Direction of QRS deflection

Added information from cardiologist: "Steiltyp" where the ECG in which the QRS in lead I is tallupright but in lead III markedly inverted, is often mistranslated. The correct English term is "marked left axis deviation"

# Terminology from the Danish text supplied for the ECG Workshop

*Contributed by Alison Holmes* The text was taken from the book "Klinisk elektrokardiologi" by Dr. Bjarne Sigurd and Dr. Erik Sandøe, published by Publishing Partners Verlag GmbH, and was used with the kind permission of Dr. Sigurd.

impulsudbredelse	QRS width, impulse width	
grenblok	branch block	
belastning	strain (as in left/right ventricular strain)	
atrieforstørrelse	atrial hypertrophy	
afledning	lead (as opposed to wire!)	
P pulmonale med spids 3.5 mm	P pulmonale with peaks of 3.5 mm	
ventrikel hypertrofi	ventricular hypertrophy	
højresidig hypertrofy	right-side hypertrophy; in this section, which discusses ventricular hypertrophy, right ventricular hypertrophy	
venstresidig hypertrofy	left-side hypertrophy; in this section, which discusses ventricular hypertrophy, left ventricular hypertrophy	
rettet væk fra V <sub>1</sub>	deflected from V <sub>1</sub>	
rettet hen mod V <sub>1</sub>	directed towards V <sub>1</sub>	
negativ T tak	inverted T wave	
høj R tak	tall R wave	
dyb S tak	deep S wave	
aktiveringstid	repolarisation	
ST forsænkning	ST depression	
med positivt QRS nettoareal i I og II	with mainly positive QRS in I and II	
lungeembolier	pulmonary emboli	
negativ T	T wave inversion	
stum iskæmi	silent ischaemia	
Prinzmetals variant angina	Prinzmetal angina	
СКМВ	an iso-enzyme of creatine kinase, found in elevated levels in plasma after myocardial infarction	

fællesbetegnelsen	the umbrella term
fællesnævner	features in common
ringe stress	mild/little stress
overgang fra	progression from
arbejds-EKG	exercise ECG
alteplase	generic name of Activase®
tenecteplase	generic name of TNKase®
EKG ændringerne ved ustabil angina som regel er flygtige	The ECG changes in unstable angina are generally transient
oftest udløst af en spasme	usually triggered by a spasm
dissekerende aortaanurisme	dissecting aortic aneurysm

AH, 31.10.2002

# <u>**Terminology from the Spanish text supplied for the ECG workshop**</u> *Contributed by Helen Wormald*

Line	Spanish	English
Title	el desfibrilador-cardioverter implantable	automated implanted (implantable)
	(DCIA)	cardioverter <sup>*</sup> -defibrillator (AICD)
Title	arritmia ventricular maligna	malignant (lethal) ventricular arrhythmia
3	muerte súbita de origen cardiaco (MSC)	sudden cardiac death
11	los servicios paramédicos son difíciles de	with poor access to paramedical services
	obtener	
15	taquicardia ventricular sostenida (TVS)	sustained ventricular tachycardia (SVT)
23	taquicardia ventricular sincopal	syncopal ventricular tachycardia
26	miocardiopatía	cardiomyopathy
27	mala función ventricular	poor ventricular function
28	fracción de expulsión	ejection fraction
29	síncope inexplicado	unexplained syncope (fainting)
39	los coronarios	patients with coronary vessel disease
42	arrithmia letal	lethal (malignant) arrhythmia
72	ECG de 12 derivaciones	12-lead ECG
74	ECG de esfuerzo	exercise ECG
	monitoreo tipo Holter	24-hour monitoring
75	radioventriculografía	radionuclide (nuclear) ventriculography
76	promediación de señales	signal averaging
77	potenciales tardíos	late potentials
91	estudios incruentos	non-invasive tests
94	electrofulguración	electrocautery (use of heated electrodes)
	foco arritmogénico	arrhythmogenic focus; focus of arrhythmia
132	ventriculotomía circular	encircling ventriculotomy
134	taquicardia ventricular monomorfica	monomorphic ventricular tachycardia
136	mapeo endocardiaco/epicárdico	endocardial/epicardial mapping
188	desfibrilación transvenosa	transvenous defibrillation
190	paleta subcutanea	subcutaneous paddle

\* cardioverter appears to be US usage and cardiovertor UK usage

193	programable con telemetría	remotely programmable
202	síndrome de QT largo	long QT syndrome
203	enfermedad eléctrica primaria	primary electrical disease
237	parche	patch
262	función de densidad de probabilidad	probability density function (PDF)
264	línea isoeléctrica	isoelectric line
267	ensanchado	wide
278	descarga	discharge (shock)
280	cardiovertir	cardiovert

# Terminology from the French text supplied for the ECG Workshop

Contributed by Karin Band

Unlike past glossaries, which were tailored to the size of the pages in the Newsletter (to ensure that entries were not cut in half by a page break), this glossary is intended for the format of the electronic Newsletter. When printing out, please bear in mind that the page break may occur half-way through an entry, creating two boxes where there should be only one.

# <u>French text: Épidémiologie et étiologie de la fibrillation atriale (P Mabo et al. *Rev Prat (Paris)* 2002;52:1295–1300)</u>

This is a list based upon a study of the English-language references and of the relevant textbook literature. Unless otherwise indicated, the translations offered refer exclusively to the sense in which the source language terms are being used in the text. [o:] = or/ou; [occ] term occasionally found in the literature; • = additional source language term

Note on the source language text: Large parts of the original are a Fr translation from an English-language source (V Fuster et al. ACC/AHA/ESC guidelines for the management of patients with atrial fibrillation. *Eur Heart J* 2001;22:1852–923.) – a fact that is acknowledged only in the Reference in the box on p 1297. Where the French version appears to depart from the (obvious) English-language original, [Fuster et al] has been added in the English column of the Glossary. Similarly, terminology from Ref [2] (the ALFA Study] has been identified where required.

Line	French	English
Affiliation	Département de cardiologie et maladies vasculaires	Department of Cardiology and Vascular Medicine
	Centre cardio-pneumologique	Cardiopulmonary Centre; Centre of Cardiothoracic Medicine
	Mél	e-mail
1	épidémiologie	epidemiology
	étiologie	aetiology
2	fibrillation atriale • fibrillation auriculaire F.A.; FA; ACFA; AC/FA arythmie complète par fibrillation auriculaire Note: 'atrial' is still rare in Fr (see article by Omicron supplied with the text for the Workshop). While the mid- June number of <i>Rev Prat</i> made every effort to say 'atrial', things were back to normal later in the year: 'bloc	<ul> <li>atrial fibrillation AF</li> <li><u>Notes</u>: (1) If the text refers to atrial fibrillation only, 'AF' may be used as the abbreviation.</li> <li>However, 'AF' is also used as the abbreviation of <i>atrial flutter</i>. If the two conditions occur in the same text, 'AFL' may be used as the abbreviation of <i>atrial flutter</i>.</li> <li>(2) At the start of a sentence, the expanded form should be used, rather than the abbreviation.</li> <li>(3) For a discussion of the use of abbreviations, see <i>Specific points</i> at the end of the Glossary.</li> </ul>
	Significantly, in the title of the French AF study ALFA, the second A is expanded as 'auriculaire' (see LL 51- 53 below).	
4	trouble du rythme soutenu	sustained cardiac rhythm disturbance; sustained (cardiac) arrhythmia

	1	Note: 'sustained' = lasting $> 30$ seconds.
5	le plus fréquent	the most common
6	des formes variées	different patterns
7	paroxystique	paroxysmal
	permanente	permanent
	Note: Still found as chronique / chronic in less	s recent texts
8	persistante	persistent
8–9	avec ou sans cardiopathie	may be associated with heart disease
8-10	avec ou sans symptômes associés	symptomatic or asymptomatic
10	incidence	incidence
11	prévalence	prevalence
11–13	sont en corrélation avec l'âge et l'insuffisance cardiaque	increase with increasing age and with the presence of heart failure (HF)
15	sujets âgés	the elderly
17	incidence annuelle	annual incidence <u>Note</u> : 'incidence' is the number of cases in unit time, which is usually one year. However, since different units of time may be used, the addition of 'annual' is not pleonastic.
18	après 80 ans	in the over-80s; in those over 80 years; in those >80 years old; in persons more than 80 years of age <u>Note</u> : 'the over-80s' is a handy translation; if the translation is for a scientific journal, it may be wise to use the longer form (which is, in fact, used throughout the Fuster et al. paper). In a (word-counted) abstract, it might be acceptable.
18–20	sa place au sein des affections cardiovasculaires va croître	it is bound to become yet more common among the cardiovascular disorders
22–23	le pronostic est dominé par	the prognosis is governed by
24	accidents emboliques	thromboembolic events
25	[accidents emboliques] cérébraux	ischaemic cerebrovascular accidents; ischaemic CVAs;
	<u>Note</u> : There are several ways of saying 'stroke' in Fr:	Ischaemic cerebrovascular events, ischaemic strokes
	accident vasculaire cérébral AVC; ictus cérébral; apoplexie cérébrale; [pop] attaque cérébrale ; attaque; [occ] attaque vasculaire cérébrale; accident cérébral	
	There is an excellent <i>Jeux de mots</i> article by Omicron on <i>Stroke et ictus –</i> <i>CVA et AVC</i> in <i>Rev Prat (Paris)</i> 1998;48:151.	
26–27	taux moyen de 5% par an	a mean rate of 5% a year
27–28	mortalité élevée	increased mortality
29–30	individus en rythme sinusal	subjects in sinus rhythm

30–31	formes isolées sur coeur sain	AF without any identifiable heart disease <u>Note</u> : In En, 'lone AF' could be inserted here. The term is certainly needed further on in the text, as the translation of Fr 'fibrillation "isolée".
33	cardiopathie sous-jacente	underlying heart disease
34	gravité	severity
36	conditionnant le pronostic	will govern the prognosis
37–38	études épidémiologiques et étiologiques	epidemiological and aetiological studies
39	réalisées	carried out; performed
41–42	aboutissant à des conclusions parfois divergentes	the conclusions reached have not always been concordant
44–45	hétérogénéité des populations examinées	different study populations
45–46	présentation clinique	clinical form; clinical pattern
46–47	formes asymptomatiques	asymptomatic forms
48	être méconnues	go unrecognized; go undetected; are missed
49–51	connaissance repose en grande partie sur	much of our knowledge derives from
51-52	enquête de Framingham	Framingham Study
53	ville "pilote" du Massachusetts	named after the town in Massachusetts in which the study has been performed <u>Notes</u> : (1) Since the Framingham Study, and the fact that the study takes its name from a town, may be assumed to be sufficiently well known among doctors in the English- speaking countries, there is (arguably) no need to translate the 'ville "pilote" du Massachusetts' bit. (2) The place name is pronounced with 'Framing-" to rhyme with "naming", and "-ham" to rhyme with "sham" or like the "-ham" in Durham.
51-53	étude ALFA (Activité libérale sur la fibrillation auriculaire)	the ALFA (Activité libérale sur la fibrillation auriculaire) Study, which was undertaken under the auspices of the College of French Cardiologists and involved 206 cardiologists established in general office practice and distributed in all regions of France <u>Note</u> : Since this study must be assumed to be better known in France than in the English-speaking countries, and since the 'activité libérale' bit may not be understood at all even by readers with a smattering of French, this is (arguably) a case for an added explanation. The rendering proposed is taken from the description in the Methods section of Ref [2]. This paper, written in English by French authors, correctly makes the point about cardiologists in general office [= non-hospital] practice; Fuster et al. refer to the study as having been performed in "patients from general practices in France", which may be misleading, certainly to a UK reader.
60–61	les données concernent	the data relates to; the data relate to <u>Note</u> : According to the <i>New Oxford Dictionary of</i> <i>English</i> , 'data' may be construed either as a plural noun [historically and in specialized scientific fields] or as a

		singular noun [modern non-scientific use]. In translations to be submitted to scientific journals, the relevant instructions for authors (if any) should be followed.
64–65	restent mal évaluées, pour ne pas dire méconnues	there is little to no information; scant if any data are available; little if anything is known
68	variables	factors
69–70	cardiopathie avec insuffisance cardiaque	heart disease involving (congestive) heart failure
70–71	une maladie clé du viellissement	one of the main disorders ([o:] most common health problems) of the elderly
71–72	promise à un "bel avenir"	should assure its future
73–74	populations occidentales	the aging ([o:] ageing) populations of the Western world
76–77	la population générale	the general population; the population at large
77–78	augmentant avec l'âge	rising with advancing age
78–79	globalement inférieure à	overall, it is less than; [Fuster et al:] in cross-sectional studies, it was found to be less than
81	les patients au delà de 80 ans	those over 80 years; the over-80s; those >80 years old; persons more than 80 years of age <u>Note</u> : See Note at L 18.
81-82	dans une population nord-américaine	four population-based surveys in the United States [Fuster et al]
82-83	âge médian	median age
86–88	le nombre total d'hommes ou de femmes en fibrillation est identique	overall, AF affects men and women in equal proportion; the overall sex ratio is 1:1; there are no gender differences
89–90	prévalence ajustée sur l'âge	age-adjusted prevalence
94–95	tranche d'âge 60-69 ans	the 65–69-year group <u>Note</u> : According to Ref [3], recruitment age was ≥65 years
95–96	au delà de 75 ans	of the patients over the age of 75
98	les 2 sexes sont également atteints	AF affects men and women in equal proportion; the sex ratio is 1:1; there are no gender differences
98–99	les hommes le sont plus tôt	men develop the condition earlier
99–100	moins représentés ultérieurement	under-represented in the older age groups
101	espérance de vie	life expectancy
103–4	le rôle est indiscutable	is obviously a factor
104–5	patients sans histoire de maladie cardio-pulmonaire	patients with no history of cardiopulmonary disease
105–6	fibrillation "isolée"	lone AF
108	séries	series; studies
	ce taux	[here:] the observed frequency
109–10	biais du type de recrutement	bias in patient recruitment
109–14	[biais] des critères retenus pour définir la notion de cardiopathie	different criteria used to define heart disease

111 12	··	
111–13	cliniques, électrocardiographiques, échocardiographiques	clinical, ECG, echocardiographic
117	affection valvulaire	valvular disease
118–19	que la maladie sous-jacente est évoluée	as the underlying condition advances
123	augmente avec l'âge	increases ([o:] rises) with (advancing) age
127–9	après ajustement sur l'âge une augmentation de l'incidence	increase in the age-adjusted incidence
131	enjeu économique	likely economic impact
136	avec un recul de 38 ans	during 38 years of follow-up
137–8	qui ont développé une fibrillation atriale	who developed AF
139–40	lors de l'inclusion	at inclusion
140	contre	versus
142	les incidences respectives	the corresponding incidences
144	les patients admis pour traitement	patients referred for treatment [Fuster et al]
145–6	l'incidence à 2 ou 3 ans	the 2- to 3-year incidence
147	selon les séries	in different series <u>Note</u> : Fuster et al cite 3 references in support of this statement.
150	influencé par le traitement	affected by treatment
151	effet protecteur	protective effect; may protect against
152–3	inhibiteurs de l'enzyme de conversion de l'angiotensine • IEC	ACE inhibitors; angiotensin-converting enzyme inhibitors <u>Note</u> : The passage corresponding to LL 149–53 in Fuster et al reads: "The incidence of AF may be lower in HF patients treated with angiotensin converting enzyme inhibitors."
154	importance conjuguée	combined impact
156	si l'on s'intéresse	in studies of
157	populations "homogènes"	"homogeneous" populations
159	pilotes ou cadets	flying personnel (flyers and cadet applicants)
159–60	British Air Force	<u>Note:</u> Wording used in Ker [4]. United States Air force; USAF <u>Notes</u> : (1) There is no British Air Force; the service is called the Royal Air Force. (2) Ref [4] is about a study performed in USAE flying
		<ul> <li>(2) Ker [4] is about a study performed in OSAF flying personnel. The confusion may stem from the mention of the Royal Canadian Air Force in Ref [6].</li> <li>(3) In En, italics would not be required. (In Fr, they are being used because the phrase is in a foreign language.)</li> </ul>
161	en excellente santé	in excellent health
162	0,04%	0.04 per thousand; 0.004% <u>Note</u> : Ref [4] reports a rate of 5/122,000 = 0.04 per thousand. This has been misunderstood by the French authors; unfortunately, this error also affects the figure in LL 165–6, which should be "100 fois supérieur" – 'one

163		hundred times as high'.
105	en revanche	the Coronary Artory Surgery Study (CASS)
164 5	l'étude CASS	the colonary Artery Surgery Study (CASS)
164–5	les sujets étaient atteints de maladie	demonstrated coronary artery disease (CAD)
1.77	coronaire	Note: amplificaton based upon Ref [5].
16/	pronostic	prognosis
168	deux risques dominent	patients with AF are exposed to two main risks
169	décès prématuré	early death; increased mortality
170	embolies systémiques	systemic thromboembolism; systemic embolism <u>Note</u> : While not every embolism is a thromboembolism, the two terms are found as synonyms in the AF literature.
172	justifient	provide the rationale for
172–3	la mise en route de mesures de prévention	preventive treatment; prophylactic treatment
174–5	patients considérés à haut risque	high-risk patients
177–8	fibrillation atriale d'origine "non rhumatismale"	non-rheumatic AF
179–80	valvulopathie mitrale d'origine rhumatismale	rheumatic mitral valve disease
180-81	est en moyenne	averages
183	indemnes de fibrillation atriale	without AF
183–4	un accident ischémique cérébral sur 6	one of every six strokes
	1	to which it refers separately. Fuster et al use the same
107		wording, with a Ref. to the Hart & Halperin paper.
18/	accidents ischémiques transitoires	transient ischaemic attacks TTAS
	• AIT	
188	formes cliniquement silencieuses	clinically occult "silent" strokes
189–90	examen tomodensitométrique	CT computerized ([o:] computed) tomography
192–3	fibrillation atriale "non valvulaire"	nonvalvular AF <u>Note</u> : Fuster et al do not use inverted commas for the adjective (presumably, because the term is more familiar in En than it is in Fr).
195–6	risque d'accident ischémique	stroke risk
197	17 fois plus élevé	increased 17-fold
198	le groupe témoin	controls
204–5	avec un recul moven de 8 6 mois	over a mean of 8.6 months of follow-up
207–9	accident ischémique cérébral imputable	stroke attributable to AF
	à la fibrillation	
216	taux de mortalité	mortality rate
217	le double de	double that of
219	il existe un lien fort	is strongly linked

220	surmortalité	excess mortality; excess risk of mortality; excess of deaths
220-221	gravité	severity
224	taux de décès global	all-cause mortality
225	les 2 tiers	two thirds of the deaths; two thirds of the mortality
225-6	de cause cardiovasculaire	attributed to cardiovascular causes
226–7	insuffisance cardiaque modérée	mild to moderate heart failure <u>Note</u> : Fr 'modéré' may mean either 'mild' or 'moderate'. In this case, the authors appear to have adopted the term to translate the En phrase 'mild to moderate'.
227–8	les données apparaissent moins tranchées	the data are mixed [Fuster et al]; the picture is less clear- cut
231–2	insuffisance cardiac chronique	chronic congestive heart failure
233–4	élévation de la mortalité	increased mortality
235–6	patients en classe II et III de la NYHA	NYHA class II and III patients; NYHA II and III patients Note: NYHA = New York Heart Association
242–4	décès par insuffisance cardiaque plutôt que par accident thromboembolique	Ref [8]: pump failure death rather than fatal stroke or PE
245	autres déterminants	other determinants of prognosis ([o:] of outcome)
246	cardiomyopathie rythmique	tachycardia-mediated cardiomyopathy; tachycardia- induced cardiomyopathy; [occ] tachycardiomyopathy <u>Note</u> : This condition is discussed separately, with references, at the end of the Glossary.
247	évoquée	proposed
248–50	la possibilité d'un dysfonctionnement ventriculaire gauche induit par la seule fibrillation atriale	the concept of left ventricular dysfunction caused exclusively by AF
251	validée	verified; confirmed; validated;
253	altération	decline; decrease; deterioration; depression
253-4	fraction d'éjection du ventricule gauche	left ventricular ejection fraction LVEF
255	se normaliser	return to normal
255-6	après contrôle du rythme <u>Note</u> : 'contrôle' is being used in the En sense of the term.	following rhythm control; once rhythm control has been obtained; once sinus rhythm has been restored and maintained; after AF has been converted; after restoration and maintenance of sinus rhythm; after conversion to and maintenance of sinus rhythm
255–7	[après contrôle] de la fréquence ventriculaire <u>Note</u> : 'contrôle' is being used in the En sense of the term.	following rate control; once rate control has been obtained; following heart rate control ([o:] control of the ventricular rate); when the heart rate is brought under control
257–8	fréquences ventriculaires moyennes	mean ventricular rate
258–9	arythmie atriale	atrial rhythm disturbance
260-1	dysfonctionnement ventriculaire gauche	left ventricular dysfunction

268	encadré	box
269–70	aucune conclusion ferme	no firm conclusions
272–3	non associée à une affection cardiovasculaire	without associated heart disease; without demonstrable underlying heart disease; with no other forms of heart disease; without any detectable heart disease; unassociated with other evidence of organic heart disease; no overt evidence of organic heart disease; not associated with any cardiac abnormalities
274–5	accroissement de la mortalité	increased mortality
275	en présence d'une cardiopathie	in the presence of cardiac comorbidity
282–4	situations pathologiques cardiaques ou extracardiaques	cardiac or extracardiac conditions
284–5	qu'il faut systématiquement rechercher	which must be systematically screened for
286–8	l'étiologie peut être une situation aiguë, transitoire, réversible	AF may be related to an acute, temporary, reversible cause <u>Note</u> : Fuster et al refer to "acute, temporary causes" and make the point that "in such cases, successful treatment of the underlying condition may eliminate AF".
288	à l'inverse	conversely
289–90	processus sous-jacent permanent, lui- même évolutif	the underlying condition may be chronic and progressive
290–1	favorisant la pérennisation de l'arythmie	which may perpetuate the rhythm disorder; in which case the rhythm disorder may well become permanent
293–4	sans étiologie décelable	no identifiable cause
295	fibrillation de cause aiguë	acute causes of AF
296–7	être en rapport avec	be related to
298–9	chirurgie, principalement cardiaque et thoracique	surgery (chiefly cardiac or thoracic procedures); surgery (chiefly heart or chest procedures); surgery (chiefly cardiothoracic procedures) <u>Note</u> : While the heart is an intrathoracic organ, the terms 'thoracic surgery' and 'chest surgery' refer to the surgery of thoracic organs other than the heart.
299-300	infarctus aigus du myocarde	acute myocardial infarction <u>Note</u> : The Fr plural would be a singular in En.
300-1	l'arythmie étant alors un marqueur de mauvais pronostic	in which setting the dysrhythmia portends an adverse prognosis ([o:] is a marker of poor prognosis; indicates a poor prognosis; presages a more serious outcome)
301-2	péricardites	pericarditis Note: The Fr plural would be a singular in En.
302	myocardites	myocarditis Note: The Fr plural would be a singular in En.
302–3	embolies pulmonaires	pulmonary embolism Note: The Fr plural would be a singular in En.
303-4	toute autre affection respiratoire aiguë	other acute pulmonary disease
304–5	le seul context clinique	the clinical setting
305–6	permet de rapporter la fibrillation à sa cause	will suggest the most likely cause of the AF
306–7	le facteur déclenchant	the triggering factor; the precipitating factor

307	loin d'être évident	less than obvious
308–9	il convient d'insister sur 2 causes	two causes should be considered
310	hyperthyroïdie	hyperthyroidism; thyrotoxicosis
310-11	dont la fibrillation peut être l'élément révélateur	which may be unmasked by AF
312–3	systématiquement recherchée	systematically looked for
313-4	dosage de la thyréostimuline hypophysaire TSH	TSH assay <u>Note</u> : TSH = thyroid stimulating hormone
314–5	et ce d'autant qu'il s'agit	this is all the more important since
316–7	expose à un risque embolique élevé	puts the patient at increased risk for thromboembolic
318	alcoolisme aigu • intoxication éthylique aiguë	acute alcohol consumption; short-term alcohol consumption; alcohol binges; [spec] weekend or holiday drinking binge; a weekend or holiday-related bout of heavy alcohol consumption
	cause non rare	which is frequently to blame
319	qu'il faut savoir évoquer	which should be considered as a cause
319–21	le classique holiday heart syndrome des Anglo-Saxons	<ul> <li>which is known as the holiday heart syndrome <u>Notes</u>: (1) Since the text is being translated into En, the phrase 'des Anglo-Saxons' can be left out.</li> <li>(2) The italics are required in Fr only, to mark the fact that non-French terms are being used.</li> <li>(3) The French tend to use 'les pays anglo-saxons' in the general sense of 'the English-speaking countries', 'the English-speaking world'; and 'les Anglo-Saxons' in the sense of 'English-language authors' etc. Using 'Anglo- Saxon' as the En translation would leave out (and seriously annoy) those of Celtic descent.</li> <li>Omicron (whose delightful <i>Jeux de mots</i> column on the origin of medical terms, published in the <i>Revue du</i> <i>Praticien</i>, is well illustrated by the article on <i>Auriculaire</i> that was sent with the MTW text) tends to use 'les Anglo-Américains', which is not a totally happy solution either.</li> </ul>
323	ingestion d'alcool	alcohol intake; alcohol consumption; alcohol use; ethanol consumption
324–5	traitement du facteur "déclenchant"	successful treatment of the underlying condition ([o:] of the precipitating cause); successful treatment of the "trigger"
326–7	entraîner la résolution de l'arythmie	resolve the AF; eliminate AF
329	évoluant sur une forme persistante	become persistent
330–1	imposant une prise en charge spécifique	treatment of the AF is essential
331–2	prévenir une évolution inévitable vers une forme permanente	to prevent the condition becoming permanent
333	secondaire à	secondary to; [Fuster et al] associated with
334–5	troubles du rythme supraventriculaires	another supraventricular tachycardia [Fuster et al]
335–6	tachycardies jonctionnelles	paroxysmal junctional tachycardia

	naroxystiques	
336–7	qu'elles s'intègrent dans le cadre de	in such conditions as
337–8	syndrome de Wolff-Parkinson-White	Wolff-Parkinson-White syndrome; WPW syndrome
349-40	circuit de réentrée intra- ou paranodale	intra-atrioventricular and para-atrioventricular nodal reentry tachycardia; AV nodal reentrant tachycardias [Fuster et al] <u>Note</u> : The En plural is justified, in this case, because it indicates that there are two different patterns of AV nodal tachycardia, one with an abnormal pathway within the AV node, and one with an abnormal pathway beside it.
344–5	prévenir la récidive	prevent the recurrence; reduce the incidence of recurrence [Fuster et al]
347	flutter atrial	atrial flutter
	analysée	discussed
350	cardiopathies	[here:] specific cardiovascular conditions [Fuster et al]
352	valvulopathies	valvular heart disease
352–3	au premier rang desquelles	most often [Fuster et al]
353	l'atteinte mitrale	mitral valve disease
353-4	cardiopathies ischémiques	ischaemic heart disease; coronary artery disease [Fuster el al] <u>Note</u> : 'ischaemic heart disease' and 'coronary artery disease' are not, strictly speaking, synonymous, although the two terms tend to be used as synonyms.
354–5	hypertension artérielle	hypertension
355	et ce d'autant qu'il existe	particularly when is present
356	hypertrophie ventriculaire gauche	left ventricular hypertrophy; LV hypertrophy
357-8	cardiomyopathie "dégénérative" du sujet âgé	degenerative cardiomyopathy associated with aging ([o:] ageing)
360	cause première	leading cause
361	modifications structurelles	structural changes
362	oreillettes	atria
	Note: Whilst this article goes to great lengths to use 'atrial(e)' as the adjective, the noun is still the <i>ancienne</i> <i>nomenclature</i> term 'oreillette'.	
362–3	au cours du processus du veillissement	as part of the aging ([o:] ageing) process
362–5	retentissement à l'étage atrial du dysfonctionnement ventriculaire gauche diastolique	atrial repercussions of diastolic LV dysfunction ([o:] of diastolic heart failure)
366	coeur sénile	senile heart
	constitutent le substrat	provide the substrate; underlie
368	évoluent rapidement	increase ([o:] rise) rapidly
369–72	la séparation entre processus physiologique naturel du viellissement	it is often difficult to tell how much is due to the natural process of aging ([o:] ageing) ([o:] to normal aging ([o:] ageing) changes), and how much is due to an abnormal

	et processus pathologique est bien souvent difficile	process
372–3	d'un intérêt plus théorique que clinique	of academic rather than of practical interest
375–6	cardiomyopathie dilatée	dilated cardiomyopathy
376–7	cardiomyopathie hypertrophique	hypertrophic cardiomyopathy HCM
378	cardiopathie congénitale	congenital heart disease
378-80	notamment en présence d'une communication interatriale chez l'adulte	especially in atrial septal defect in adults
380-1	troubles de la genèse de l'influx	disorders of impulse formation
381-2	dysfonctionnement sinusal	sinus node dysfunction; sinus node disease [Fuster et al]
	dysfonction sinusale	
302-3	<ul> <li>syndrome brady-tachycardie</li> <li>maladie du sinus; dysfonction sinusale; maladie (rythmique) de l'oreilette; maladie rythmique auriculaire</li> <li><u>Notes</u>: (1) The additional terms listed above are used by some authors as synonyms of 'syndrome brady- tachycardie'.</li> <li>(2) There is also the longer term 'syndrome bradycardie-tachycardie'.</li> <li>[See additional material at end of Glossary]</li> </ul>	syndrome; [less commonly] tachycardia-bradycardia syndrome; [less commonly] tachycardia-bradycardia syndrome; "tachy-brady syndrome"; sick sinus syndrome <u>Note</u> : Bradycardia-tachycardia syndrome is defined, in the 17/e <i>Merck Manual</i> (p 1738), as an important variant of sick sinus syndrome. In <i>Clinical Cardiology</i> by MD Cheitlin et al, the two terms are given as synonyms. The 6/e <i>Braunwald's</i> lists bradycardia-tachycardia syndrome as one of the several sinus abnormalities covered by the term sick sinus syndrome. [See additional material at end of Glossary]
384	tachycardies supraventriculaires	supraventricular tachycardias
385	tachycardies jonctionnelles	junctional tachycardias <u>Note</u> : In the passage corresponding to LL 382–5, Fuster et al have 'sinus node disease, ventricular pre-excitation, and supraventricular tachycardias'. The term 'pré-excitation ventriculaire' is used in Fr. However, the term 'tachycardies jonctionnelles' was deliberately chosen by the author, because "les préexcitations ventriculaires peuvent s'accompagner ou non de TJ et ce sont les TJ qui peuvent induire la FA. C'est pourquoi j' ai retenu le terme de TJ qui en plus peuvent se voir en l'absence de préexcitation ventriculaire." [Answer by the senior author to an e- mailed question]
37–8	de facon plus exceptionnelle	maned question
389	dans un contexte de	in a setting of
389–90	cardiomyopathie restrictive	restrictive cardiomyopathy
390–1	maladie amvloïde	amyloidosis
391	hémochromatose	haemochromatosis
391–2	fibrose endomvocardique	endomyocardial fibrosis

392–3	tumeur cardiaque	cardiac tumours Note: In this enumeration, a plural would be more usual
		<u>in En.</u>
393–4	péricardite constrictive	constrictive pericarditis
394	prolapsus valvulaire mitral	mitral valve prolapse MVP
394–5	est classiquement associé	has been associated
395–6	une incidence élevée	a high incidence
396–7	maladies respiratoires chroniques	chronic chest disease
397–8	avec retentissement sur le coeur droit	affecting the right heart
398–9	"coeur pulmonaire chronique"	<ul> <li>chronic cor pulmonale</li> <li><u>Note</u>: No need for inverted commas in En (and debatable need in Fr).</li> <li>[See Note on inverted commas (double quotes) in <i>Specific points</i> at the end of the Glossary]</li> </ul>
402–3	syndrome d'apnée du sommeil	sleep apnoea syndrome
406	la distribution de la fibrillation atriale en fonction des diverses causes	the aetiological pattern of AF
409–10	moyens diagnostiques mis en oeuvre pour la recherche étiologique	investigations used
411–12	critères de normalité retenus	criteria of normality adopted
418	limites méthodologiques	methodological shortcomings; limitations of the study
419	"photographie"	"snapshot"
424–5	hypertrophie ventriculaire gauche	[here:] hypertensive heart disease [Ref. 2]
426–7	les cardiopathies ischémiques	[here:] coronary artery disease [Ref 2]
428–9	valvulopathies rhumatismales	rheumatic valvular heart disease [Ref 2]
429–30	cardiopathies dilatées	dilated cardiomyopathy [Ref 2]
430	cardiopathies hypertrophiques	hypertrophic cardiomyopathy [Ref 2]
431	maladie respiratoire	bronchopulmonary disease [Ref 2]
432–3	insuffisance cardiaque	congestive heart failure [Ref 2]
439–40	dysfonctionnement diastolique du ventricule gauche	diastolic LV dysfunction; diastolic heart failure
440–1	caractéristique du sujet hypertendu et âgé	typical of elderly hypertensive patients
447	en l'absence de cause retrouvée	where no precipitating cause can be identified; where there is no evidence of underlying heart disease; where there is no evidence of a cardiac condition; in the absence of apparent heart disease; in the absence of identified cardiovascular pathology [Fuster et al]
449–50	ce qui pose de nombreuses questions	this label is debatable
450-2	les atteintes nombreuses	a wide array of disorders
451	susceptibles d'être associées	which may be associated
453	affirmer	to state with certainty

454	données cliniques	[here:] clinical examination
454–5	examens complémentaires habituels	routine further investigations
455–6	la stricte normalité anatomique et fonctionnelle	that the heart is anatomically and functionally normal
466–7	relativement proches	fairly similar
469–70	premier épisode	first episode; first-detected episode
471–2	diagnostic initialement porté	initial diagnosis
473	reconsidéré	revised
475	jusque-là latente	hitherto latent
477–8	normalisaton secondaire	return to normal following successful treatment of AF
479	excluant la présence de	evidence of the absence of
480–2	faire retenir a posteriori le diagnostic de fibrillation atriale isolée	allow the rhythm disturbance to be retrospectively labelled lone AF
485–6	une entité clinique bien réelle	an actual clinical entity
487–8	fibrillations "vagales"	vagal form of AF
489	fibrillations "focales"	focal form of AF
490-1	"foyers arythmogènes"	arrhythmogenic foci; focal source
491–2	au niveau des veines pulmonaires	in the pulmonary veins
493–4	plus anécdotiques sont	have also been reported; there are anecdotal reports of
494	formes familiales	familial forms
496–7	mutations génétiques propres à la fibrillation	specific gene mutations; a specific chromosomal defect
497–8	la possibilité d'une transmission héréditaire	[these cases] suggest that the condition may be inherited ([o:] passed on genetically)
503–4	dans ce contexte	[here:] in this age group
504–5	on ne peut établir un lien obligatoire	the coexistence should not be taken as evidence of a cause-and-effect relationship
501-2	ne relever que d'une pure coïncidence	[the association] may be purely coincidental
503–4	système nerveux végétatif	autonomic nervous system <u>Note</u> : The addition, in brackets, of "neurogenic AF" might be a good idea.
512–4	paraître comme le seul élément déterminant, agissant comme facteur déclenchant	may be the only identifiable precipitant ([o:] trigger)
515-8	des patients dont le tissu atrial présente une sensibilité particulière à une élévation du tonus vagal ou sympathique	patients with increased sensitivity of atrial tissue to enhanced vagal or sympathetic tone ([o:] to raised acetylcholine or catecholamine levels); [may trigger AF] in susceptible patients through heightened vagal or adrenergic tone [Fuster et al]
518–9	fibrillation d'origine "vagale"	vagal AF; vagally induced AF
519	observée plus volontiers	more prevalent; more common; seen more often

520-1	débutant vers 40-50 ans	age approximately 40 to 50 years at onset
523	l'accès arythmique démarre	episodes typically start
524	en période d'hypertonie vagale	during periods of enhanced vagal ([o:] parasympathetic) tone
525	volontiers	Note: This term may be left untranslated here
	au repos	at rest
525-6	après les repas	after eating
526	[après] l'ingestion d'alcool	after ingestion of alcohol
27–8	survenir de façon élective	tends to occur
529	stimulation adrénergique intense	intense adrenergic stimulation
530–2	les tableaux de fibrillation vagale ou adrénergique "pure" sont relativement rares	neurogenic AF is relatively rare as a pure entity; patients with pure vagal or adrenergic AF are uncommon
531	fibrillation vagale	vagal AF; vagally induced AF
	fibrillation adrénergique	adrenergic AF; adrenergically mediated AF
	• FA catécholinergique	
532–6	les accès survenant volontiers chez un même patient dans des situations variables, mettant en jeu à la fois une stimulation vagale ou adrénergique	since it is not uncommon for both vagal and adrenergic forms to occur, at different times, in one and the same patient, depending on which portion of the autonomic nervous system has been stimulated
537-8	savoir identifier ces présentations particulières	be able to correctly diagnose what would otherwise be considered lone AF
539–41	en raison des implications thérapeutiques potentielles	a correct interpretation of the pattern may enable the clinician to select agents more likely to prevent recurrent episodes [last part of the sentence: Fuster et al]
543	du fait de	<u>Note</u> : For stylistic reasons, it may be preferable to split the sentence in two, starting with the statement that AF is common in elderly subjects, especially in those who have associated heart disease; and starting the 2nd sentence with "This is why".
547–49	une maladie du premier plan dans le domaine cardiovasculaire	one of the leading cardiovascular health problems; a major problem in cardiology; [here:] a major public health problem; a major health care problem
549–51	risque embolique et diminution de l'espérance de vie sont les enjeux pronostiques	patients with AF are at risk for thromboembolism and have a reduced life expectancy
555	démarche étiologique rigoureuse	everything must be done to seek the cause
556–7	sur coeur sain	without identifiable heart disease
558–9	peut se révéler sous des aspects multiples	has a wide array of clinical presentations
560	cette hétérogénéité	this wide variety of clinical patterns

Note: the full text of the Fuster paper referred to in the French glossary is available free of charge on the web, which would have saved a hefty photocopying bill. It has been suggested that I reproduce the search, as an

example of how to use Medline via Pubmed, so here it is; the hyperlinks (in blue) should take you to the various stages. My comments are in italics. -PS.

I noticed the reference in the box in the French text on p. 1297, so I went to the Pubmed search box on the main page at <u>http://www.ncbi.nlm.nih.gov/entrez/query.fcgi</u> and entered: **Fuster V AND Ryden L** 

This brought up 3 entries:

1: Fuster V, Ryden LE, Asinger RW, Cannom DS, Crijns HJ, Frye RL, Halperin JL, Kay GN, Klein WW, Levy S, McNamara RL, Prystowsky EN, Wann LS, Wyse DG, Gibbons RJ, Antman EM, Alpert JS, Faxon DP, Fuster V, Gregoratos G, Hiratzka LF, Jacobs AK, Russell RO, Smith SC Jr, Klein WW, Alonso-Garcia A, Blomstrom-Lundqvist C, de Backer G, Flather M, Hradec J, Oto A, Parkhomenko A, Silber S, Torbicki A.

ACC/AHA/ESC Guidelines for the Management of Patients With Atrial Fibrillation: Executive Summary A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines and the European Society of Cardiology Committee for Practice Guidelines and Policy Conferences (Committee to Develop Guidelines for the Management of Patients With Atrial Fibrillation) Developed in Collaboration With the North American Society of Pacing and Electrophysiology. Circulation. 2001 Oct 23;104(17):2118-50. No abstract available. PMID: 11673357 [PubMed - indexed for MEDLINE]

Fuster V, Ryden LE, Asinger RW, Cannom DS, Crijns HJ, Frye RL, Halperin JL, Kay GN, Klein WW, Levy S, McNamara RL, Prystowsky EN, Wann LS, Wyse DG.

ACC/AHA/ESC guidelines for the management of patients with atrial fibrillation. A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines and the European Society of Cardiology Committee for Practice Guidelines and Policy Conferences (Committee to develop guidelines for the management of patients with atrial fibrillation) developed in collaboration with the North American Society of Pacing and Electrophysiology.

Eur Heart J. 2001 Oct;22(20):1852-923. No abstract available. PMID: 11601835 [PubMed - indexed for MEDLINE]

□ 3: Fuster V, Ryden LE, Asinger RW, Cannom DS, Crijns HJ, Frye RL, Halperin JL, Kay GN, Klein WW, Levy S, McNamara RL, Prystowsky EN, Wann LS, Wyse DG, Gibbons RJ, Antman EM, Alpert JS, Faxon DP, Fuster V, Gregoratos G, Hiratzka LF, Jacobs AK, Russell RO, Smith SC, Klein WW, Alonso-Garcia A, Blomstrom-Lundqvist C, De Backer G, Flather M, Hradec J, Oto A, Parkhomenko A, Silber S, Torbicki A.

ACC/AHA/ESC guidelines for the management of patients with atrial fibrillation: executive summary. A Report of the American College of Cardiology/ American Heart Association Task Force on Practice Guidelines and the European Society of Cardiology Committee for Practice Guidelines and Policy Conferences (Committee to Develop Guidelines for the Management of Patients With Atrial Fibrillation): developed in Collaboration With the North American Society of Pacing and Electrophysiology.

J Am Coll Cardiol. 2001 Oct;38(4):1231-66. No abstract available. PMID: 11583910 [PubMed - indexed for MEDLINE]

The article actually referenced was the one in the European Heart Journal - no. 2 - so although it says "No abstract available", I clicked on the list of authors to see if there was a full-text link. There was, but it linked to the Elsevier Science site, which requires a subscription. However, reference No. I

was from a different journal, Circulation, so I thought I tried that one. The abstract came up, with a red label stating "Full text article at circ.ahajournals.org". Clicking on the label downloaded the whole text, with illustrations, in 15 seconds (using a broadband connection).

## cardiomyopathie rythmique

[also found as cardiomyopathie dilatée rythmique]

http://www.paris-ouest.univ-paris5.fr/hebergement/cec\_mv/236.pdf

Un rythme ventriculaire rapide au cours de la FA (> 130 battements par min) peut entraîner à la longue une altération de la fonction systolique ventriculaire gauche («cardiomyopathie dilatée rythmique») qui peut régresser avec le contrôle de la fréquence ventriculaire.

The original paper was: E Phillips and SA Levine. Auricular fibrillation without other evidence of heart disease: a cause of reversible heart failure. *Am J Med* 1949;7:478-89. (Note that, in those days, it was 'auricular fibrillation' in English.) The authors mentioned "... outspoken congestive heart failure ... all evidence of heart disease may disappear with complete return to a normal state if the gross irregularity [= AF] can be restored to normal rhythm." "... auricular fibrillation ... cardiac enlargement and congestive failure developed. After reversion to normal rhythm ... the heart size returned to normal and the congestive failure disappeared."

Among the modern references are:

Redfield MM, Kay GN, Martin RC, et al. Tachycardia related cardiomyopathy—a common and reversible cause of ventricular dysfunction in patients with atrial fibrillation. (Abstr) *Circulation* 1996;94(8 Suppl):1-21

http://www.mcmahonmed.com/wworks/CHARTS/afib/textfiles/present.html

"... associated complications--particularly emboli or tachycardia-induced cardiomyopathy. Tachycardia-induced cardiomyopathy may present with severe congestive symptoms and marked left ventricular (LV) dysfunction, and is preventable/ reversible with rate control."

# sick sinus syndrome, bradycardia-tachycardia syndrome

### French

# V Fattorusso & O Ritter. Vademecum clinique du diagnostic au traitement. 15/e Masson 1998:1348-9.

"syndrome de bradycardie-tachycardie. Synonymes: maladie de l'oreillette, maladie du sinus, dysfonction sinusale. NOTE: Les termes *maladie du sinus* et *maladie de l'oreillette* sont parfois considérés comme synonymes. D'autres réservent le terme "maladie du sinus" à la dysfonction isolée du noeud sinusal, avec accès de bradycardie sans épisodes de tachycardie, observée après conversion électrique pour fibrillation auriculaire. Dans le cadre de la maladie du sinus et de la maladie de l'oreillette, la bradycardie sinusale "inadaptée", le syndrome de bradycardie-tachycardie et le bloc sino-auriculaire sont des expressions diverses du même syndrome de *sénescence des tissus de conduction supraventriculaire* qui aboutit le plus souvent à la fibrillation auriculaire."

http://www.paris-ouest.univ-paris5.fr/hebergement/cec\_mv/284.pdf.

Les troubles de conduction à l'intérieur du coeur peuvent se situer à différents niveaux. Pour le noeud sinusal, on parle de **maladie du sinus**.

La dysfonction sinusale, en dehors des conditions précedemment décrites, se manifeste à l'ECG - soit par une bradycardie importante,

- soit par une bradycardie importante,

- soit par des pauses cardiaques avec arrêt sinusal,

- soit par un aspect de bloc sino-auriculaire,

- soit par la combinaison de ces différentes anomalies

La dysfonction sinusale peut aussi alterner avec des épisodes de tachycardie, il s'agit du **syndrome bradycardie-tachycardie** ou **maladie de l'oreillette**.

# English

# MD Cheitlin et al. 6/e Prentice-Hall International Inc. 1993:482-3.

**"bradycardia-tachycardia syndrome (sick sinus syndrome)** ... The term "sick sinus syndrome" denotes symptoms of dizziness, syncope, and bradycardia due to the slow rate resulting from impulse formation in the sinoatrial node or its conduction to the atrioventricular node. The term "bradycardia-tachycardia syndrome" is preferred by some cardiologists because patients characteristically have paroxysmal atrial or junctional tachyarrhythmias in addition to the slow heart rates ...

The mechanism of bradycardia-tachycardia syndrome can ... be sinus bradycardia, sinus node arrest, sinoatrial conduction defect, or disease of the atrioventricular node ... Atrial arrhythmias can result."

# Heart Disease. A Textbook of Cardiovascular Medicine. E Braunwald et al (eds). 6/e W.B. Saunders Company 2001:826.

sick sinus syndrome = a number of sinus abnormalities

(1) persistent spontaneous sinus bradycardia (caused by drugs and inapppropriate for the physiological circumstance)

(2) sinus arrest or exit block

(3) combinations of SA and AV conduction disturbances

(4) bradycardia-tachycardia syndrome

# http://merck.praxis.md/bpm/bpmtables.asp?page=BPM01CA18&table=BPM01CA18T05

**"Sinus-node dysfunction (sick sinus syndrome)** Inappropriate bradycardia, pauses, or arrests on ECG. Usually follow periods of tachycardia (including sinus, atrial tachycardia, fibrillation, and flutter): so-called **"tachy-brady syndrome."** AV and bundle-branch block often coexist."

Specific points that would need bearing in mind in the real-life translation of this paper

1. <u>Unreferenced source</u>

The client should be encouraged to reference the paper by Fuster et al, from which large parts of the paper appear to have been drawn.

Fig. 1 and Table I should indicate that these are adapted from Fuster et al.

- 2. <u>Mis-spelt or missing names</u>
- Middelkauf = Middlekauf [Table I]; [4] Lam = Lamb [Références];
- 3. Multiple authors

When referring to the work of other authors in the text of a paper, Continental authors tend to give only the first author's name (sometimes only the name of the author they consider to be the most famous); in English-language journals, this is a serious no-no. The References attached to the paper will need to be checked to ensure that X, X and Y, or X et al, are correctly mentioned in the text. In the case of the present paper, Philipps = Phillips and Levine [L 247] (and should have been included in the References).

- <u>Mistakes in quotations from sources</u> British Air Force [original: USAF] [LL 149-50]; 15 à 50 ans [original: 16 to over 50] [L 160]; 0,04% [original: 0.04 per thousand] [L 162]; 5 à 59 ans [original: 50 to 59 years] [L 210]
- 5. Use of abbreviations
  - La Revue du Praticien does not like abbreviations:

"En principe, les abréviations des locutions techniques, médicobiologiques, ne sont pas acceptées. Quand elles semblent inévitables au rédacteur (certains textes de biologie ou de biochimie), elles peuvent être employées la mort dans l'âme et à la condition formelle qu'elles aient toutes été expliquées au moment de leur première apparition. Aucune abréviation n'échappe à la règle, même si elle est jugée courante et comme allant de soi." [*Choix et recommendations de style pour les Monographies de La Revue du Praticien*; cited by Omicron. *Jeux de mots. Rev Prat (Paris)* 1998; 48:151]

Some English-language journals take a similar (or even stricter) line. If the paper is for submission to a journal, the instructions for authors should be checked.

6. Italics

The French custom of italicizing English terms (to mark them as foreign) does not apply when the term occurs in the translation into English.

# 7. <u>Inverted commas (double quotes)</u>

Double quotes (to mark slightly unusual terms) tend to be used a lot less in English than they are in French (and certainly less than in the present paper). According to the senior author, the *guillemets* bracketing "coeur pulmonaire chronique" were used because the term was considered to be a bit old, and the author did not like it very much. (The same, presumably, goes for other terms between double quotes in the text.)

# Acknowledgements

The senior author's replies to e-mailed questions concerning the paper are gratefully acknowledged.

Just a **brief note on the** *Fibrillation et flutters atriaux* **text** in the box (which was not part of the MTW assignment):

Fr 'flutter' is 'flutter' in English (where the word came from); 'palpitations' are a feature of tachycardias in general.

is thme cavo-tricuspide = is thmus between the tricuspid annulus and the orifice of the IVC (inferior vena cava); subeustachian is thmus [where 'eustachian' refers to the eustachian valve of the IVC].

# **Terminology odds and ends**

# (1) A set of German Web sites on SVTs

One interesting set of German articles – lots of terminology (but beware of such mistakes as 'lown atrial fibrillation')

Authors: Klaus Kattenbeck, Hans-Joachim Trappe Journal: *Medizinische Klinik* 

http://www.multimedica.de/public/html/uvogel/ZE/FUFZE104X/1998/01/12.html

Supraventrikuläre Tachykardien Teil I: Vorhofflimmern - Vorhofflattern: Diagnostik und Therapie 93(1998), 47-48 (Nr. 1) http://www.multimedica.de/public/html/uvogel/ZE/FUFZE104X/1998/02/10.html Supraventrikuläre Tachykardien Teil II: AV-Knoten-Reentry-Tachykardie: Diagnostik und Therapie 93 (1998), 111-112 (Nr. 2) http://www.multimedica.de/public/html/uvogel/ZE/FUFZE104X/1998/03/09.html Supraventrikuläre Tachykardien Teil III: Präexzitationssyndrome - Diagnostik und Therapie 93 (1998), 177-180 (Nr. 3) http://www.multimedica.de/public/html/uvogel/ZE/FUFZE104X/1998/05/09.html Supraventrikuläre Tachykardien, Teil IV: Atriale Tachykardien - Diagnostik, Mechanismen und Therapie

93 (1998), 319-320 (Nr. 5)

# (2) Further terminology from Rev Prat (Paris) 2002;52

ondelettes ondelettes filles contraste spontané intra-atrial gauche thrombus de l'auricule gauche cardioversion pharmacologique cardioversion électrique

wavelets daughter wavelets spontaneous echocontrast in the left atrium thrombus in the left atrial appendage pharmacological cardioversion electrical cardioversion

# (3) 'bibloc' and 'rhythm strip'

The Fr term '**bibloc'** can be a problem. It occurs both in the sense of 'bifascicular block' ("Les biblocs. L'association d'un bloc de branche droite avec un hémi-bloc antérieur gauche ou un hémi-bloc postérieur gauche") and in the sense of '(right or left) bundle branch block' (in the phrase 'bibloc alternant'("bibloc alternant - alternance d'un bloc de branche droit et d'un bloc de branche gauche") = 'alternating bundle branch block' [alternating periods of right and left bundle branch block]. Whilst the term is deprecated by cardiologists, it may still be come across in the literature.

In <u>French</u>, finding an equivalent of '**rhythm strip**' is somewhat difficult. There is no snappy way of rendering the prolonged recording of the ECG from just one lead (usually lead II). For the actual recording, such terms as '**long tracé**' or '**longue bande ECG**' may be used; for the technique as such, there is '**l'enregistrement d'une dérivation sur une longue durée pour une analyse plus précise du rythme**'.

In German and in Spanish, there are suitably short terms:

In German: Rhythmusstreifen

In <u>Spanish</u>: tira de ritmo

## (4) ventricular flutter

[This is a shortened version of an e-group message sent out after the MTW] There was some concern, following the ECG Workshop, that people who had previously translated G

'Kammerflattern' as 'ventricular flutter' might havegot it wrong.

For some reason, our lecturer did not seem to recognize the term 'ventricular flutter', and stated that it was just 'ventricular tachycardia'. Perhaps VFl is more commonly used by cardiologists than in A&E. Also, some textbooks and Web sites state that the condition is clinically identical to ventricular fibrillation, and is treated identically.

There are some texts (including the Merck Manual) which do not contain the term 'ventricular flutter'. On the other hand, the term is in a number of textbooks of cardiology (including the 3 biggest cardiologies on the shelves of the British Library) or electrocardiography; and on numerous Web sites (see below).

(1) <u>Textbooks</u>

- Cardiology:

-- Heart Disease. A Textbook of Cardiovascular Medicine. E Braunwald et al

(eds). 6/e W.B. Saunders Company 2001:870

flutter = "regular large oscillations occurring at a rate of 150–300/min (usually 200). The distinction between rapid VT [= ventricular tachycardia] and ventricular flutter can be difficult and is usually of academic interest only."

-- Hurst's The Heart. V Fuster et al (eds). 10/e McGraw-Hill 2001:840 "ventricular flutter: a sine wave configuration at a cycle length of 200 to 220 ms"

-- Diseases of the Heart. DG Julian et al (eds). 2/e W. B. Saunders Company Ltd. 1996:596-7

"ventricular flutter is a 'sinusoidal' wave form at a rate of 150–300 beats/min." "ventricular flutter – a 'sinusoidal' ventricular tachycardia"

- Electrocardiography

-- Electrocardiography. The Monitoring and Diagnostic Leads. R Wiederhold. 2/e W. B. Saunders Company 1999:123

"ventricular flutter – a form of ventricular tachycardia in which the ventricular complexes cannot be distinguished from the T waves and the ST segments; the rate is usually 180 to 260 beats per minute, but may be faster."

-- ECG Analysis and Interpretation. BC Lipman & T Cascio. F. A. Davis Company 1994:136

"Ventricular flutter is a ventricular rhythm that looks like a very rapid VT ... The rate is between 250 and 300 bpm."

-- Marriott's Practical Electrocardiography. GS Wagner. 10/e Lippincott Williams & Wilkins 2001:371

"ventricular flutter – rapid organized ventricular activity without discernible QRS complexes or T waves in the ECG" p 366-7

"Ventricular flutter looks like a larger version of atrial flutter, but it remains regular and orderly only transiently because the rapid, weak myocardial contractions produce insufficient myocardial blood flow. As a result, there is prompt deterioration toward the irregular appearance of ventricular fibrillation. Ventricular flutter has been given various names, including "ventricular tachycardia in the vulnerable period" and "prefibrillation"." (2) Web sites

http://www.emedicine.com/emerg/byname/ventricular-fibrillation.htm

Ventricular flutter is a variant of VF in which the electrocardiogram appears as a sine wave. In contrast to the irregularity of VF, ventricular flutter may be difficult to distinguish from VT.

http://rnbob.tripod.com/ventricularflutter.htm

"Extreme" V-tach.

http://www.geocities.com/Heartland/Pointe/4891/care1.html.

Ventricular flutter is a fast but still coherent contracting of the ventricles. ... In case of ventricle fibrillation, there is no more coherency in the contractions: the heart is "shaking" but does not beat any more. http://electrogram.com/intro.asp.

Monomorphic ventricular tachycardia (VT) is defined as ventricular tachycardia having a monomorphic configuration and a cycle length of 500 or less milliseconds. Polymorphic ventricular tachycardia (PMVT) us defined as a ventricular tachycardia having a polymorphic configuration and cycle length of 500 or less milliseconds. Ventricular flutter (VFt) is defined as any monomorphic VT with a consistent cycle length of 250 or less milliseconds. Ventricular fibrillation (VFb) is defined as any PMVT with a consistent cycle length of 250 or less milliseconds.

http://www.studio-delos.com/glossary/f.htm

PACING GLOSSARY published by Pacesetter, Inc. a division of St. Jude Medical.

fibrillation. A type of cardiac arrhythmia characterized by rapid, unsynchronized quivering of atria or ventricles. Atrial fibrillation may be asymptomatic, but ventricular fibrillation is typically fatal if not corrected within minutes.

flutter. A rapid but regular rhythm (250 to 350 bpm in the atria or 200 to 300 bpm in the ventricles) often seen on the ECG as a saw-toothed pattern. Ventricular flutter may result in death unless corrected in minutes. From

http://www.cdc.gov/nchs/data/icd9/draft\_icdch09.pdf

it would appear that the ICD-10 will have separate entries for ventricular tachycardia (I47.2) and ventricular flutter (I49.02). (The draft shown on that site is dated May 2002).

It would appear that 'ventricular flutter' is also in Harrison's Principles of Internal Medicine 15/e 2001; however, I have not checked this out (yet).

The bottom line is that (1) the term 'ventricular flutter' is amply documented in leading textbooks; (2) while the heart rate criteria of what is VFl differ in the literature, there is agreement on the pattern, and on the prognostic and treatment implications;

(3) 'ventricular flutter' is a useful term to describe a subset of the ventricular tachycardias;

(4) in a text like the German WS text, where "Kammertachykardie" is distinguished from "Kammerflattern" in terms of the heart rate (up to 200 bpm vs 200–250 bpm), it is vital to have two terms available;

(5) while the term is by no means uncommon in the English-language literature, it may be even more frequently encountered in the German literature ('Kammerflattern') – as the example of the heart axis diagram distributed at the WS (and – hopefully – to be published in the next Newsletter) shows, the Germans tend to go into an amazing amount of detail when it comes to cardiology.

# (5) History of AF terminology

http://www.asiapace.org/news\_3.html.

When did atrial fibrillation become atrial fibrillation?

By Gaston Bauer, Consultant Cardiologist, Sydney, Australia

Two last comments on ECGs, from <u>http://www.blouse-brothers.com/</u> (the "Forums" section of the site will help you keep up to date with modern - or future - medical French usage ...)

http://forums.remede.org/viewthread.php?tid=83

"magne toi de passer en P2, a Cochin y'avait un TD tres sympa d'ECG. Avec des volontaires. On en avait marre, les mecs, de toujours devoir nous y coller a montrer nos torses velus, on a gueule, les filles s'y sont mises, et les boutiques de lingerie du coin ont du faire fortune, pasque y'en avait pas une qui avait un sous-tif nul. Treeeeees bien, le TD sur l'ECG.

On a eu aussi un TD d'echo. Heureusement, y'avait une copine enceinte, c'etait rigolo. Elle a gagne pour son

biquet un marsupilami GEANT de bien 2 metres de haut, offert en grande pompe dans l'amphi par les collegues reconnaissants."

and if you were at the workshop, you'll understand this one:

http://www.blouse-brothers.org/forums/viewthread.php?tid=1851

"quote: quel est l'intérêt de ECG à 18 dérivations puisque ce sont des images miroir que tu cherche ?

"OULALA: ECG 18 dérivations systématique car: ON NE VOIT PAS TOUT SUR LE 12 DERIV: MANQUE LE POSTERIEUR ET LES DERIVATIONS DROITES (et t'es mort) petit truc si pas fait d'emblée (que moi et nassime avons rappelé): le miroir antérieur de l'IdM postérieur: sous dec et grande onde R en précordG Ecoute ce qu'on dit bordel!

# Review of the "Dictionnaire anglais-français des sciences médicales et paramédicales", by William J. Gladstone

Edisem Maloine, 5th ed. 2002. ISBN: 2-89130-188-9 (EDISEM) (ISBN: 2-224.02744-3 (MALOINE)

This is the new edition of the Gladstone dictionary, the 4th edition of which was reviewed in the September 1998 *Newsletter* by Karin Band. The essence of what was said then still applies: "The dictionary is, very clearly, the result of considerable research, and a wide-ranging study of the primary French medical and scientific literature. It does not content itself with what might appear to be the most direct renderings, but reflects "how they say it" in the French-speaking countries. [..] The dictionary is – very obviously – the work of a practising translator, who is fascinated by medicine and by language."

The 5th edition has been considerably revised and expanded, and many, though not all, the points raised in the previous review have been addressed – details are given below. The dictionary has 1367 pages (expanded from 1282 in the 4th edition); 72.5 pages of E abbreviations, with expansions and translations, and often with equivalent Fr abbreviations; spelling is American English, with cross-referencing from British English in some cases (e.g. haematology, haemoglobin and leukaemia are cross-referenced; anaemia is not; paracetamol has its own entry, giving both paracétamol (m) and acétaminophène (m); autopsy and post mortem are both included; furosemide is included, but frusemide is not. Canadian Fr terms are marked *Québec*.

The layout is very clear, with headwords in bold type, grammatical categories and French gender given, a large number of restrictive labels, and a few notes, e.g. for the entry:

# English (adj) (n): anglais.

*English-speaking*: de langue (*ou* d'expression) anglais; anglophone; « anglo-saxon ». (*Remarque:* relativement peu d'Américains sont d'origine anglo-saxonne).

There is no guide to pronunciation.

Details relating to scientific communications are included, e.g. senior author; our italics).

One further change from the 4th edition is the acknowledgement of a new contributor. The last paragraph of the Introduction warmly thanks Karin Band who, according to the author, not only contributed a large number of very useful terms, but also reviewed and corrected all the additions to the new edition. "Nous reconnaissons en elle une linguiste médicale tout à fait remarquable."

Overall, I have to say that although this dictionary is  $En \rightarrow Fr$  rather than  $Fr \rightarrow En$ , which is the direction in which I translate, I find it invaluable for checking my interpretation of new French terms; it's the only bilingual dictionary I would have any confidence in. I find it impossible to look up just one term, I find myself browsing the dictionary and finding other English terms and French equivalents that I didn't know, or hadn't known how to translate. I've learnt so much just by reading the rest of the page when I look something up (I hadn't heard of the term 'hit-and-run drugs', drily

translated as 'médicaments don't l'action est essentiellement irréversible'). Clearly the definitions have been derived from an awareness of actual usage in both languages. This is a specific aim of the dictionary, stated in the introduction: "Nous avons aussi, comme dans les précédentes éditions, fait la chasse aux termes qui présentent des difficultés liées à leur caractère polysémique. Ainsi, *array, capping, score, overriding*, ont diverses significations qui dépendent, comme toujours, du contexte. Nous avons donc considérablement enrichi les « contextes »." If only other dictionary compilers would do the same!

These four entries quoted in the Introduction are a useful and typical example of the dictionary: **array (n):** (1) déploiement (m); alignement (m); étalage (m). (2) disposition (f); répartition (f). (3) éventail (m); gamme (f); assortiment (m); choix (m); sélection (f); série (f); collection (f). *diode array detector:* détecteur à barrette de diodes. *in a random array:* répartis au hasard.

**capping (n):** (1) coiffage (m); pose d'une coiffe. (Dent). (2) capsulage (m) (d'un flacon). (3) clivage (m). (Rupture de la partie supérieure ou inférieure du comprimé en cours de fabrication). (4) phénomène de formation de calotte polaire; redistribution polaire; capping (m). (Immunol.) *pulp capping:* coiffage pulpaire (Dent.).

**score (n):** (1) cote (f); cotation (f); valeur numérique (f); note (f); score (m). (2) notation numérique du niveau de réussite; score (m); résultat (m). (3) barre (ou sillon) de cassure (ou rainure) de comprimé sécable (ou divisible ou rainuré).

Apgar score: indice d'Apgar.

falling score: score descendant.

International Prostate Symptom Score: I-PSS score international des symptômes prostatiques; IPSS. rising score: score ascendant.

*the score assigned to side effects:* la cotation des effets secondaires. *zero score:* score nul.

overriding (n): chevauchement (m); surplombement (m).

overriding aorta: aorte à cheval.

*overriding of fetal cranial bones:* image de double contour de la tête foetale. (Dans la mort du foetus). *overriding of fractured bone fragments:* chevauchement des fragments d'un os fracturé.

And anyone who has been on the CMETI course will recognise a few old friends under **control** and **pattern**.

Inevitably there are a few reservations:

# • Some of the strange source-language entries are still included:

'pronaus', 'epiploon', 'perone'.

# • Some new spelling mistakes have been introduced:

'blowlegs' (which was 'bowlegs' in the 4th edition); 'specifif inhibitor' (which was 'specific inhibitor').

# • Some spelling errors in the 4th edition are still there:

'aceptor splicing site'; 'stalagtite'; 'balcony [for 'bacony'] degeneration'; 370 [for 37°] in the 'body temperature and pressure saturated with water vapour' subentry under 'temperature' (and that 'saturée' in the Fr translation should be 'saturé', as the reference is to a gas.)

There are one or two errors in the new additions: 'eicosapentaeoic acid' (in the Abbreviations section) should be 'eicosapentaenoic acid'. In the translation of 'reductase inhibitors', the semicolon between 'HMG-CoA' and 'réductase' is misleading.

'AS<sub>2</sub>O<sub>3</sub>' [under 'anhydride'] should be 'As<sub>2</sub>O<sub>3</sub>', as it is an arsenic (As) compound.

• Some entries have been misfiled:

'clinical laboratory' is still under 'labor' (between 'atonic' and 'complicated').

# • Some factual errors have been carried over from the 4th edition:

'superior vena cava syndrome' cannot be 'syndrome de la pince mésentérique', since the SVC is not in contact with the mesentery. The 'pince' is found in French as a 'syndrome de la mésentérique supérieure', and involves the horizontal portion of the duodenum getting squashed between the SMA (i.e. not the vein) and the aorta.

'backwash ileitis' (for which there is the perfectly good Fr 'iléite de reflux') cannot be 'sur un court segment de l'iléon terminal en aval de la valvule iléocolique', since anything downstream of the ileocaecal valve is, by definition, no longer in the ileum.

A 'medullary sponge kidney' cannot be a 'dilatation congénitale des voies biliaires intrahépatiques'.

(This subentry has spelling errors in 2 consecutive words: 'canalicullaire précalicelle' – a rare occurrence in the *Gladstone*.)

An 'adenocarcinoma' is a malignancy; the translation 'adénocarcinome' is correct, but an 'adénome', which is equally given as a translation, is a benign condition. Similarly, in the subentry, an 'adenocarcinoma of the prostate' is not an 'adénome prostatique', which is the time-honoured French term for what should nowadays be called 'hypertrophie bénigne de la prostate'.

Leucine zipper is given as 'leucine fermeture éclair', rather than the more common 'fermeture éclair leucine' or 'leucine zipper'.

Interestingly, some of these mistakes were identified after finding certain errors in the *Djordjevic* dictionary (which, as mentioned in the review of that title in the *Newsletter* of September 2002, shows an uncommonly large number of parallels with the – unreferenced – *Gladstone*), and checking back to see if these mistakes were also in the *Gladstone*.

# Enhancements:

# • Deleted since 4th edition:

cephalorachidien fluid; lascivia; abaxile; etc.

Unfortunately, 'joint' (in the drug slang sense of the term) has also been deleted.

# • Corrected since 4th edition:

Misfilings such as the filing of 'abarthrosis'.

Mis-spellings such as 'sidérophyline' (now 'sidérophiline'); 'pouding' (now 'pounding'), 'lemnicus' (now 'lemniscus').

Mistranslations such as 'appendicular skeleton' – ' nom donné au squelette de l'épaule et de la hanche' (now 'squelette appendiculaire'; 'squelette des membres').

The 'rete pegs' (for which the 4th edition had a lengthy and topsy-turvy description) are now, correctly, 'crêtes (*ou* bourgeons) interpapillaires'.

# • Improved since 4th edition:

In the Abbreviations section, the Fr equivalent of PIVKA has gone from a translation ('acarboxy-facteur') not verifiable on the Web, and a laborious definition, to 'protéine induite par les antivitamines K (ou par l'absence de vitamine K); PIVKA'.

'to burp an infant' – was 'faire émettre une éructation à un nourrisson' (now 'faire faire son rot à un bébé').

'inflammatory bowel disease' – from a five-line entry to 'maladies inflammatoires chroniques de l'intestin; MICI'.

'stent' has had many more subentries added; 'stent graft' and 'stent dressing' figure elsewhere in the dictionary. The use of 'stent' as a verb is now recognized, although 'stenter' seems to have been judged an unwarranted Anglicism, and not given houseroom.

'conflit' has been added to the translations of 'impingement'.

'agony' now has 'douleur atroce' as its first meaning.

Newly added anatomical terms tend to give both the old and the new *nomenclatures anatomiques*: e.g. 'deltoid eminence' – 'empreinte deltoïdienne (*ou* V deltoïdien); tubérosité deltoïdienne'.

# • New terms:

needlestick injury; code cart; crash cart; immunostaining; to present with – consulter pour; reductase inhibitors; protease inhibitors; Karnofsky scale; "no code"; couch grass; fiberscope; Gulf war syndrome; odds ratio; etc.

# • New bacteria and new drugs:

*Gardnerella vaginalis; Erwinia;* coccobacillus; *Bacteroides thetaiotaomicron;* etc. famciclovir; venlafaxine; filgrastim; recombinant human erythropoietin; saquinavir; etc.

# • New abbreviations

SPC; IRN; SSRI; SIRS; ASAP; ddC; d4T; etc. In some instances, the Fr abbreviations have been added – e.g. EIC added to 'espace intercostal'.

# • The dictionary includes very long lists of syndromes, diseases, and tests

# And finally – a wishlist for the next edition:

ASCUS = abnormal squamous cells of unknown significance; assisted conception; a further meaning of capping, as in budget capping ('plafond budgétaire'); flat-lining, electromechanical dissociation (EMD) and pulseless electrical activity (PEA), as mentioned by Nicky Drake at the ECG workshop; enterohaemorrhagic *E. coli*; office (*or* white-coat) hypertension; overriding, in the sense of the the mechanism by means of which moulding is achieved ('chevauchement sutural à la naissance' in French); pouchitis; tent (v); preoperative autologous blood donation; SSS = sick sinus syndrome; sluggish reflexes; UK job titles such as registrar, senior house officer (SHO), staff grade, specialist registrar (SpR), to go with US intern and resident; sentinel node biopsy, in a more general sense than 'ganglion de Troisier'; bioburden; bear down (as in labour); balloon angioplasty, and plain old balloon angioplasty (POBA); surgery (as the UK equivalent of US office); serotonin-reuptake inhibitors; osseointegration; wheezy; nil by mouth; aortic leaflet etc. etc.

# Conclusion

This dictionary is a fascinating read, which is not a term I ever thought I would apply to one of the basic tools of my trade, no matter how indispensable I thought it. And most importantly, it is an excellent bilingual medical dictionary, whichever direction you translate in.

- *PS* 

# **DOCTORS AND INTERPRETERS WORKING TOGETHER**

# **Annemarie Fox and Dr Petra Clarke 2003**

The Medical Foundation for the Care of Victims of Torture was founded as a charity in 1985. Its clients suffer psychological and physical effects as a result of torture and witness atrocities perpetrated on their families. Using a holistic approach, Medical Foundation staff help them to reassert their own dignity and worth.

The services provided by the Medical Foundation are intensely personal, and demand trust and understanding. Many of the Foundation's clients are recent arrivals in this country and do not speak fluent English. From the early days the Medical Foundation had, in a pioneering move, set up its own interpreting service enabling clients to communicate in their own language. During the years that followed interpreters have been closely cooperating with staff who were recruited for the additional services that were subsequently developed at the Foundation. Staff, whether medical, therapeutic, legal or support, have therefore a long experience of working through and with interpreters.

This paper concentrates on the doctor- interpreter dynamic to assess what factors facilitate or hinder effective working practices. The same questionnaire was given to interpreters and doctors who regularly carry out medico-legal work to provide expert reports. Doctors at the Foundation generally undertake two types of work. They prepare expert medico-legal reports for the courts that document scars and other physical and psychological signs and symptoms that are consistent

with a history of torture. They also provide long-term therapeutic support for some clients. They were asked to focus on their experiences during the report writing sessions rather than during the therapeutic consultations. Sessions usually last between one and two hours. When the client's lawyer has requested an expert medical report, the doctor does not usually know the client beforehand and the sessions are limited to those necessary to prepare the report. The personal dynamic during such limited exchanges may be different from that established during repeated therapeutic sessions.

Eight questionnaires were returned from doctors and a similar number from interpreters. The doctors were asked how many years since they had qualified. The numbers were 18, 34, 38, 38, 39, 45, 45, about 50 years. They had prepared reports for the Medical Foundation for 3, 3, 5, 6, 7, 9, 10, 12 years. The interpreters were asked how many languages they offered (excluding English). One offered one, five offered 2, one offered 3 and one, 4. English was the native tongue of three of the eight interpreters.

Both doctors and interpreters were asked to list the factors they believe facilitate the working relationship between client, doctor and interpreter. They were also asked to name factors that may make difficulties in working together.

Trust between client, interpreter and doctor is essential for a good working relationship. One doctor wrote that work between doctor and interpreter was facilitated by 'a personal relationship developed over time with mutual respect and understanding'. Other replies endorsed the benefits of a mature and professional working relationship. If time is allowed for discussion between clinician and interpreter either before or after the session, and preferably both, such exchanges build up a body of knowledge and recognition between doctor and interpreter that can be an invaluable aid in treatment (B. Dearnley: One Clinician's experience of working with Interpreters, SPMP Bulletin 7, May 2000). Both doctors and interpreters need to be familiar with the methods and effects of torture. Misunderstandings, embarrassments or emotional upsets are counterproductive particularly in work which can cover the worst accounts of one person's inhumanity to another. The session must be unhurried, both to allow the client time to come to terms with their memories and to ensure that the client and the doctor understand each other without ambiguity. Further appointments which involve the same staff must be available, in other words, continuity of the cooperative work must be assured.

A commitment from both doctor and interpreter to the well-being of the client was seen as greatly facilitating the building of trust. This extends from immediate needs such as helping someone who is distressed by the interview or whose child needs attention, to concern for their long-term welfare. Both parties felt that the client must be at the center of the relationship. Questions need to be addressed directly to the client, with eye contact, even if they understand no English. If a doctor addresses the interpreter directly, speaking of the client in the third person, the client can feel their position usurped – especially if the client speaks a little English (J.Cambridge: The Linguist Vol.37. no.5 1998). The interpreter and the doctor should not talk about extraneous matters nor discuss the case, such as treatment, progression or personal data, without involving the client. One comment described the relationship as 'a partnership of three'.

Most of the replies mention the importance of the environment in which the session takes place and favour one that is informal and calm. Client, doctor and interpreter need time at the beginning for introductions and need to make clear their roles. The doctor has to explain what is to happen and what the outcome will be. The interpreter's listening skills and the ability to empathise will help to promote good communications. Interpreters' listening behaviours constitute one of their main resources for demonstrating their particular status of being excluded from the exchange but included in the exchanging (C. Wadesjö: Interpreting in crisis – Triadic Exchanges 2001). The interpreters said that they found it helpful to be briefed so that they had forewarning about the central background to the case. The doctors benefited where the interpreter was able to explain the client's cultural milieu or practical aspects of their country of origin. Many of the interpreters in the team have backgrounds similar to our client group, having themselves fled their countries because of persecution or ill-treatment. The client may need to be reassured that the interpreter is supportive or at least not judgmental if he or she is from the same country. Sympathetic interest and concern from the interpreter certainly contributes positively. On the other hand, the interpreter who draws specifically on their own experiences of violence and detention may hinder the doctor's decision making. This was highlighted by one of the doctors who remarked "Difficulties arise if they have seen fewer numbers of torture victims, as may be the case with interpreters from agencies". The interpreter's role and ethics are based on the assumption that personal feelings are controlled and contained (M. Lindbom-Jakobson: Working with interpreters in the treatment of tortured refugees). Each of those involved in the session must respect personal and professional boundaries.

On the technical side, doctors accepted a range of interpreting styles, but expressed preference for short lengths of interpretation. One doctor wrote: "I have a strong preference for short commentaries to be interpreted so that I know what the non-verbal stuff is about". Interpreters also asked for short sentences that avoid jargon or medical abbreviations. They asked doctors to phrase questions that are unambiguous and that offer clear options for the answer. Doctors and interpreters need to give their whole attention to the client; telephones and mobile phones should not ring and the staff should not deal with other business during a session.

The same issues were mentioned in reply to the question on how the doctor/interpreter/client relationship could be improved. In general, there were pleas for more time in the sessions, for closer working relationships, and for opportunities both in and outside the consulting room to build trust between doctor and interpreter. Some doctors admitted that when they started at the Medical Foundation they had felt self-conscious, even ill at ease, because of the unfamiliar dynamic of conversing through an interpreter. Induction training for new doctors and interpreters, backed up by regular in-service training was suggested.

It is for the client's benefit that doctor and interpreter enjoy an effective working partnership. This study has not been able to explore our clients' views directly. Both doctors and interpreters have, over the years, gleaned clients' responses to their contact with the Medical Foundation and have tried to change practices to accommodate the needs of clients better, as described above.

One aspect that sometimes places clients at a disadvantage, is lack of information about the ethos and purpose of the Medical Foundation. Individual clients have expressed disappointment that they are not advised about their physical ailments (except in a very general sense), that they have received no special investigation or treatment and that these services are available only from their general practitioner.

Some of the interpreters' comments indicate that they would like the organisation to do more for the clients financially, educationally and socially. It is important that all three people involved in the consultation acknowledge its scope and have similar expectations about what the outcomes will be.

Any working relationship can benefit from regular appraisal. The findings outlined above give pointers to better practices. It is our belief that most of the factors mentioned are already incorporated into the ways of working of doctors and interpreters at the Medical Foundation. Critical factors were found to be longstanding and trusting relationships backed by respect for each others' professional expertise and boundaries and the recognition of the interpreter as a legitimate member of the triadic relationship.

We thank our medical and interpreting colleagues for providing the information on which this paper is based. We acknowledge the patience and good humour of our clients who have to tell their painful stories to strangers often from another culture. We have learned much from them.

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### <u>Useful websites</u>

Some medical websites sent in by Marie Désy-Field: In the Summer issue of the journal from the Ordre des traducteurs, terminologues et interprètes agréés du Québec, Circuit, there is a whole page dedicated to medical websites and I thought that some might not be known to everyone:

WHO in French, English and Spanish: <a href="http://www.who.int/terminology/ter/genndx.html">www.who.int/terminology/ter/genndx.html</a> and <a href="http://www.who.int/terminology/ter/genndx.html">www.who.int/terminology/ter/genndx.html</a> by WHO.

European Agency for the Evaluation of Medicinal Products: <a href="http://www.emea.eu.int/">http://www.emea.eu.int/</a>

MTDesk: <u>www.mtdesk.com/mt.shtml</u> Medical terminology site with glossaries, up-to-date terminology and other useful information.

Medline: <u>http://omni.ac.uk/medline/</u>: list of free Medline services on Internet.

List of medical resources on Internet: glossaries, dictionaries, data base etc: <u>http://www.useekufind.com/medres.htm</u>

Terminologie médicale archaïque (old medical terminology) www.paul\_smith.doctors.org.uk/ArchaicMedicalTerms.htm

Multicultural and multilingual site on information of health: <a href="http://www.overlakehospital.org/library/multi.htm">www.overlakehospital.org/library/multi.htm</a>

Medical journals: <u>www.freemedicaljournals.com</u> Links to medical journals available free of charge on Internet in different languages.

The Merck Manual: <a href="https://www.merck.com/pubs">www.merck.com/pubs</a> Free consultation of 3 of its manuals: the Merck Manual of Medical Information (Home Edition), the Merck Manual of Geriatrics (third edition) and the Merck Manual of Diagnosis and Therapy (17th edition). Cardiothoracic medicine with pictures from Yale University: <a href="http://www.info.med.yale.edu/intmed/cardio/imaging/">http://www.info.med.yale.edu/intmed/cardio/imaging/</a>

Santé Canada (English, French): <u>www.hc.sc.gc.ca</u> Site bilingue du gouvernement du Canada offrant une multitude d'informations. L'index alphabétique peut s'avérer une excellente source de terminologie.

Laboratory tests: site explaining laboratory tests and their results : <a href="https://www.labtestsonline.org/site/index.html">www.labtestsonline.org/site/index.html</a>

Who named it ? www.whonamedit.com: dictionary of medical eponyms

For a lighter note: Le musée du charlatanisme: www.mtn.org/quack

In Impact médecine, no 10, 4th october 2002, there is an article on the pharmaceutical company Servier which talks about a 7 minute film that we can see on Internet called " The major steps in discovery of a medicinal product" on <u>www.servier.com</u> and the same in French on <u>www.servier.fr</u> " Les grandes étapes de la découverte d'un médicament." Obviously one needs speakers to hear the commentaries.

## Other websites:

http://www.experienceispa.com/glossary/glossaryA.html
glossary of spa-related therapies - the sort of thing you can never
find when you need it ...

http://www.dermaweb.com/lexique/def index.html Lexique Dermo-Cosmetologique - French monolingual dermatology glossary - useful definitions

http://www.qualite-hospitalisation-privee.asso.fr/glossaire.htm

du "Guide du consommateur". Entre autres: Accident; Adultes; Ambulatoire (Prestations et soins); Assurance de base; Assurances complémentaires; Assurances complémentaires (catégories d'assurances complémentaires); Assurance obligatoire de soins; Bonus; Caisse maladie; Catégories d'assurances complémentaires; Choix du fournisseur de prestations; Conditions de résiliation; Dents (soins dentaires); Deuxième avis médical; Organisation de maintient de la santé; Hospitalisation

http://www.imshealthcanada.com/htmfr/4\_4\_1.htm Ressources communautaires: French-English health care glossary, from IMS Health Canada

<u>http://www.upmc.edu/MinSurg/Procedures.htm</u> laparoscopic procedures and other useful information

http://www.amershamhealth.com/medcyclopaedia/index.asp Complete online version of The Encyclopaedia of Medical Imaging by NICER

Includes text and images from The Encyclopaedia of Medical Imaging's eight volumes: Physics, Techniques and Procedures, Normal Anatomy, Musculoskeletal and Soft Tissue Imaging, Gastrointestinal and Urogenital Imaging, Chest and Cardiovascular Imaging, Neuroradiology and Head and Neck Imaging, and Paediatric Imaging.

http://www.whonamedit.com/index.cfm

A dictionary of medical eponyms - contributed to the egroup by Liz Askew

And finally - a model surgical report of an unusual and tricky operation <a href="http://www.learnlink.emory.edu/peep/surgery.html">http://www.learnlink.emory.edu/peep/surgery.html</a>