



ECGs CAN BE EASY

*A Comprehensive Course for
Biokineticists*

*Dr Suzan Bowman
Reg. Biokineticist & ACSM Clinical Exercise Specialist*

This course has been accredited for Continuous Professional Development (CPD) points by the Biokinetics Association of South Africa in association with the School of Physiotherapy, Sport Science & Optometry, Faculty of Health Science, University of KwaZulu-Natal.

008/B002/2012/00165





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is a comprehensive course designed and presented by a Biokineticist for Biokineticists. The following are the

elements which will be covered by the 2 day course. When “lost”, it is to this that the Biokineticist can return for perspective.

1. Introduction & statistics	
2. Principles of electrophysiology & electrocardiography	
3. Electrical views of the heart	
4. Anatomy of the conduction system	
5. Elements of the ECG	
1. P	
2. PR	
3. QRS	
4. ST	
5. QT	
6. T	
7. U	
6. QRS/Cardiac Axis	
7. HR	
8. Interpreting the ECG	
9. Rhythm	
1. Sinus arrhythmias	
A. Sinus bradycardia	
B. Sinus tachycardia	
C. Sinus arrhythmia	
D. Sinus pause (sinus arrest & Sinus exit block)	
E. Sick sinus syndrome	
2. Atrial arrhythmias	
A. Premature Atrial Contraction (PAC)/ Atrial extrasystole	
B. Non-conducted PAC	
C. Atrial escape	
D. Wandering atrial pacemaker (WAP)	
E. Paroxysmal Atrial Tachycardia (PAT) / Atrial tachycardia	
F. Atrial flutter	
G. Atrial fibrillation	
H. Wolf-Parkinson-White Syndrome (WPW)	
I. Notes on supraventricular tachycardia	
3. Junctional/ nodal arrhythmias	
A. Junctional rhythm	
B. Accelerated junctional rhythm	
C. Paroxysmal Junctional tachycardia (PJT)	
D. Premature Junctional Contractions (PJC)/ Junctional extrasystole	
E. Junctional escape	
F. AV blocks (1st, 2nd degree Type 1, 2nd degree Type II, 3rd degree)	
4. Ventricular arrhythmias	
A. Premature Ventricular Contraction (PVC)/ Ventricular extrasystole	
B. Ventricular escape	
C. Idioventricular Rhythm (IVR)	
D. Accelerated Idioventricular Rhythm (AIVR)	
E. Ventricular Tachycardia (VT)	
F. Torsade de Pointes	
G. Ventricular Fibrillation (VF)	
H. Ventricular standstill/ Ventricular asystole	
I. Bundle Branch Blocks [BBB (LBBB [LAFB & LPFB] & RBBB)]	
10. Other abnormalities/ disorders	
1. PEA	
2. Ischemia & infarction	
3. CAD	
4. Pericarditis	
5. Atrial (LAA & RAA)	
6. Pulmonary disease	
7. Ventricular (LVH & RVH)	
8. Hypertensive heart disease	
9. Hyperventilation	
10. Electrolyte Abnormalities	
11. Drug therapy	
12. Pacemaker	



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This comprehensive course is aimed at student, intern, and qualified Biokineticists who work with clinical populations and who do clinical exercise testing. The aim is not only to provide a theoretical overview of the anatomy of the cardiac conduction system, but also to present the content in a way that logically links cardiac anatomy and the electrophysiological changes that present on the ECG so that it is not merely an identification of what, but why, these changes occur. As Taylor (2009:37) states: "ECG changes logically reflect what is happening in the heart's anatomy & physiology. All of it makes more sense if you think of the mechanism while learning the diagnostic criteria".

Furthermore, recognition of dangerous rhythms, patient management and an overview of medical treatment of these conditions is covered. Some of the sections dealing with medical interventions by medical doctors or cardiologists are beyond the scope of Biokinetics practice, but it is nevertheless important to have an overview of this knowledge.

Some basic knowledge of ECGs is required by all Biokineticists. This course is an attempt to contribute to that knowledge. I will also provide an opportunity to apply this knowledge in the practical part of the course, where you will practise interpreting numerous ECGs. After all, the development of competence and confidence comes with practice, and many Biokineticists do not get enough practice to be good at it.

A basic knowledge of ECGs is required in order to benefit from this course. The handout provided is not intended to be a comprehensive written manual, but, rather, a guide. Take notes during the course on the blank page opposite the slides. The volume may be overwhelming to those with little experience or practice, but revision and practice in your own time after the course will be of great benefit, and the content will begin to make more sense.

Remember that as a Biokineticist, it is not your role to make the diagnosis and/ or to "scare" the patient. It is however your responsibility to interpret the ECG, refer the patient when necessary, and to recognize dangerous rhythms, in order to prevent dangerous situations. You should also be prepared to deal with medical emergencies.

Also note that this course includes information pertaining to Advanced Cardiac Life Support (ACLS), emergency, and other medications. This is for your information only, to give you an idea of overall patient care during certain cardiac events. Some of the procedures are beyond the scope of a Biokineticist and pertain to ACLS certified providers and medical personnel only. As a Biokineticist, you are expected to do as much as you can for the patient, within your scope of practice, to be qualified and current in basic life support (BLS, includes AED), and to have an emergency response system and to activate it immediately, if necessary.

ABOUT THE PRESENTER

Dr Suzan Bowman graduated from the University of Pretoria with an Honours degree in Biokinetics. She then continued with a Master's degree in Human Movement Science and a DPHIL specializing in Human Movement Science. Dr Bowman also obtained the American qualifications: National Strength and Conditioning Association (NSCA) Certified Strength and Conditioning Specialist (CSCS) (re-certified in 2009), and the American College of Sports Medicine (ACSM) Certified Clinical Exercise Specialist (re-certified in 2009). Furthermore, she has obtained the American Heart Association Advanced Cardiac Life Support Certificate. From 2000-2006 she practised Biokinetics at the Institute for Sport Research, at the University of Pretoria. In the past 18 months Dr Bowman has done over 900 ECGs at Cardiologists in Pretoria.



Program for DAY 1	
09h00	Registration
09h30	Introduction, statistics
10h00	Principles of electrophysiology, electrocardiography & electrode placement exercise
10h45	Tea break
11h00	Electrical views of the heart & exercise
11h15	Anatomy of conduction system & normal path of conduction
11h30	Elements of ECG waveforms in detail, including abnormalities & the normal ECG
12h30	Lunch
13h15	Cardiac Axis & exercise
14h15	HR & exercises
15h15	Tea break
15h30	Interpreting the ECG
16h30	End

Program for DAY 2	
08h30	Rhythm
08h45	Arrhythmias (sinus arrhythmias)
09h30	Arrhythmias (atrial arrhythmias)
10h15	Tea break
10h30	Arrhythmias (junctional arrhythmias)
11h15	Arrhythmias (ventricular arrhythmias)
12h30	Lunch
13h15	Other abnormalities
14h00	Tea break
14h15	Practice interpretation of ECGs (about 50 examples)
16h00	Test
16h30	End

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12 CEUs & 6 CEUs for Rhythm strip interpretation (TOTAL 18 CEUs)

BOOKING FORM			
Please indicate the date of the course you would like to attend:			
Pretoria (27 & 28 January 2012)	Johannesburg (10 & 11 February 2012)	Cape Town (2 & 3 March 2012)	
Durban (23 & 24 March 2012)	Potchefstroom (4 & 5 May 2012)	Bloemfontein (Date to be confirmed)	
Full name			
HPCSA number			
ID number			
Please select one of the following:	Biokinetics student	Intern	Registered Biokineticist
Practice details	Practice owner	Employee	
Practice number			
Practice address			
E-mail			
Tel			
Cell			
Cost of course	Biokinetics students R 1200 per person	Biokinetics interns R 1700 per person	Registered Biokineticists R 2200 per person
The course fee includes a 200 page course manual, lunch and refreshments			
TOTAL OF 18 CEUs			
Acceptance is on a first-pay-first-accept basis			
Please e-mail proof of payment as well as application form to suzanbowman@mweb.co.za			
Bank details:			
Name	SM Bowman		
Bank	Nedbank		
Branch	Hatfield		
Branch code	160245		
Account number	1631125591		

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If you have any comments, suggestions, recommendations or questions, feel free to contact me.

OTHER COURSES BY THE SAME PRESENTER:

THE FIRST CONSULTATION: BACK TO BASICS (3 CEUs plus 4 CEUs home study)

Health Screening & Risk Stratification

This course has been accredited for Continuous Professional Development (CPD) points by the Biokinetics Association of South Africa.

SUBMITTED FOR ACCREDITATION

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