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MEDICAL & SCIENCE MEDIA

Cardiology SOFTWARE

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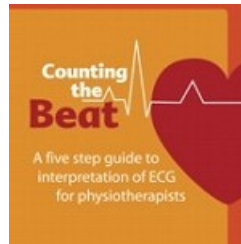
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<http://www.msmedia.com.au/cardiology-software.php>

[Cat.# MU-20](#)**Counting the Beat - Wins**

Counting The Beat was developed to provide a systematic approach to the interpretation of ECG's.



It is divided in to four sections covering basic anatomy, methods of ECG measurement, step by step interpretation of 18 different rhythm strips and real time interactive self assessment.

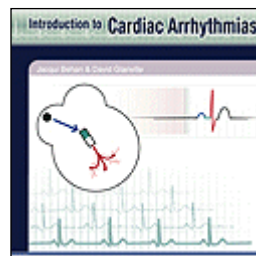
It is an ideal tool for both Undergraduate and Postgraduate physiotherapy students who work in acute Cardiothoracic Physiotherapy and in an Intensive Care Unit. It can also be used as part of an orientation program for graduate physiotherapists.

Authors: Ms Sue Berney and Dr Linda Denehy

System Requirements: Any computer with DVD drive that can play video DVD.

[Cat.# MU-23](#)**Introduction to Cardiac Arrhythmias – Wins & Mac**

Introduction to Cardiac Arrhythmias is designed to help you to develop beginning level skills in interpreting and analysing cardiac rhythm disturbances (cardiac arrhythmias).



The program was originally developed for students enrolled in subjects within the human sciences discipline. Therefore, you should note that all rhythm strips contained in the program have been recorded in adult humans in the acute care setting.

Animations have been used to link the altered electrocardiographic features of common arrhythmias to specific impulse formation or conduction abnormality. This approach will assist you to recognise cardiac rhythm disturbances and relate them to the altered impulse formation of conduction.

Authors: Jacqui Behan and David Glanville

System Requirements: **Windows:** Windows PC 200 MHz Pentium-based PC or compatible, 64MB of RAM, Windows 2000/XP, 16 bit colour display, 800 x 600 screen resolution, internet Explorer 5.5 or Mozilla Firefox 1.0, Flash Player Plug-in 7.0. **Macintosh:** 200MHZ PowerPC processor-based Mac, 64MB of RAM, Mac OS 9.1, 16 bit colour display, 800 x 600 screen resolution, internet Explorer 5.2, Safari 1.2 or Mozilla Firefox 1.0, Flash Player plug in 7.0.

[Cat.# AN-6](#)**Hemodynamic Simulator - Wins**

The Hemodynamics Simulator is a computer program that will help you review cardiovascular physiology, invasive monitoring and vasoactive infusions. Follow the 20 self-directed lessons to explore use of the pulmonary artery catheter and interpretation of the pressure waveforms in a variety of clinical scenarios.

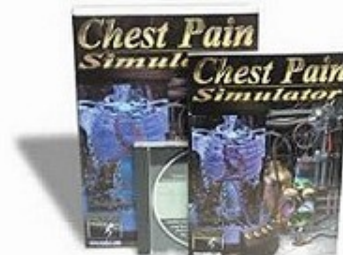
- Preload
- Afterload
- Contractility
- LV Diastolic Compliance
- Pressure-Volume Loop class
- Frank-Starling Curve
- Myocardial ischemia
- Congestive heart failure
- Valvular heart disease
- Hypovolemic shock
- Anaphylaxis
- Pulmonary embolism



Systems Requirements: Internet Explorer 4.01, or higher, or Netscape 4.x.

[Cat.# MS-3](#)**Chest Pain Simulator - Wins**

Opportunity. Danger. The workup of chest pain presents both. With thrombolytic drugs, the physician can help the MI patient as never before. Yet never has the danger been greater: Lawsuits for improper management of chest pain



The Chest Pain Simulator addresses both the opportunity and the danger. It simulates the workup of chest pain, including many non-cardiac causes of pain, and gives the user practice in determining the indications and contraindications to thrombolytics.

"This program is an excellent training environment for physicians interested in learning state-of-the-art thrombolytic therapy for acute myocardial infarction." Medical Software Reviews

The Chest Pain Simulator screen is designed for easy history-taking, examination, testing, and intervention. You manage the Chest Pain Simulator patients like real ones: stabilize, take a full history, perform a physical exam, order and interpret tests, and give treatment orders. The computer watches your workup, looking for weaknesses and pointing them out. The program also rates your time- and cost-efficiency.

The program features a single-student, or multiple student mode that is set up at program installation. Tutorials help you get "up to speed" on thrombolytic therapy and chest pain workup. And the manual contains some of the most practical information you've ever read. It's even available in the program. Other nice features include an on-line patient chart.

Systems Requirements: Pentium processor 133Mhz or faster, 8 MB RAM, 5 MB hard drive space, CD-ROM drive, 256 colour VGA monitor, keyboard, mouse. Windows® operating system. Compatible with Windows 95, 98, NT, Me, 2000 and XP®.

[Cat.# MS-5](#)**MicroEKG - Wins**

Learn 12-lead ECG interpretation on your desktop computer with the MicroEKG program. There's no faster or easier way to learn to read ECGs. This program is a must-have for every hospital.



MicroEKG starts with the basics: Cardiac Anatomy, ECG theory, lead placement, wave-forms and intervals. Next you'll learn rhythm stripe interpretation learn possible meanings of abnormal wave forms, abnormal intervals, and arrhythmias.

Once you've mastered the basics, MicroEKG goes on to the 12-lead ECG. Through interactive tutorials and quizzes, you'll learn to interpret QRS axis infarct diagnosis, infarct location, and infarct age. You'll learn the causes of ST Depression you'll master diagnosis of chamber enlargement, or hypertrophy, acute and chronic pericarditis, ischemia, and much more. Browse through ECG's and rhythm strips. Pull up a diagnosis and see if you can recognize all the features on the ECG. Pop up a table, or chart at any time while taking a lesson.

When you're ready, MicroEKG will present 12-lead ECG's and rhythm strips for interpretation. You type an ECG diagnosis in plain English, and the program evaluates your interpretation. MicroEKG provides hints, pointing out any features you may have overlooked. This program will make you a "master ECG reader" in no time.

Systems Requirements: Pentium processor 133Mhz or faster, 8 MB RAM, 5 MB hard drive space, CD-ROM drive, 256 colour VGA monitor, keyboard, mouse. Windows® operating system. Compatible with Windows 95, 98, NT, Me, 2000 and XP®.

[Cat.# EZ-1](#)**Easy Arrhythmia - Wins**

Simulation of two-dimensional activation maps in the heart

Heart activation images were generated by computer simulations using an electrophysiological model that incorporates recent data on cardiac tissue properties and arrhythmia mechanisms. The model parameters were adjusted so that the heart's activity is synchronized with the ECG signals. Each simulation lasts between 10 and 25 seconds.

Database of more than 30 arrhythmias and conduction abnormalities. The database includes:

- Sinus arrhythmia
- Sinoatrial block
- Wandering atrial pacemaker
- Sick sinus syndrome
- Premature atrial complexes
- Unifocal atrial tachycardia
- Multifocal atrial tachycardia
- Atrial flutter
- Atrial fibrillation
- 1st-degree AV block
- 2nd-degree AV block (Mobitz I, II, and 2:1)
- 3rd-degree AV block
- Junctional escape complexes
- Nonparoxysmal junctional tachycardia
- AV nodal reentrant tachycardia
- AV re-entrant tachycardia



- Wolff-Parkinson-White pattern
- Premature ventricular complexes (PVCs)
- Ventricular bigeminy
- Ventricular trigeminy
- Ventricular couplets
- Fusion beats
- Multiform PVCs
- Right bundle-branch block
- Left bundle-branch block
- Idioventricular rhythm
- Accelerated idioventricular rhythm
- Monomorphic ventricular tachycardia
- Ventricular flutter
- Ventricular fibrillation

Real ECG signals

The software displays excerpts of two-ambulatory EKG recordings extracted from the MIT-BIH Arrhythmia Database and other EKG libraries. The libraries have been used extensively around the globe by researchers and medical device manufacturers to test the performance of arrhythmia analysis algorithms.

Interactive and user-friendly graphical interface

The graphical interface simulates a virtual ECG device with additional animation panels:

- Multimedia buttons to control the animation sequence (Play, Stop, Pause, Frame by Frame, and speed control).
- Beat-to-beat display of heart rate, QRS complex duration, and PR and corrected QT intervals.
- The ECG intervals are presented in the form of bars with different colors to distinguish between normal and abnormal values.
- ECG screen with different graphical flavors: cyan, amber, and green traces on black background, or blue-dark trace on ECG paper.
- Options to display beat annotations and a screen grid.

Documentation

Each arrhythmia case is documented. The document includes different sections such as description of the arrhythmia, ECG characteristics, and electrophysiological mechanisms. Related arrhythmias that are not included in the software are also discussed. Figures and diagrams are included to illustrate important concepts. A separate chapter introduces basic concepts of cardiac electrophysiology and mechanisms of arrhythmogenesis.

Limitations

1. The heart is a complex three-dimensional structure. Our simulations, which are based on a two-dimensional model of the heart's electrical activity, portray a simplified projection of the three-dimensional activation maps observed in epicardial and endocardial measurements during electrophysiological experiments.
2. The number of ECG leads is limited to two.

System Requirements: Windows 98/Me/NT(SP6)/2000/XP, Pentium III 500 MHz or equivalent, 128 MB RAM, 100 MB of free hard disk space, 800x600 minimum screen resolution.

[Cat.# EZ-2](#)

Arrhythmia Chaser - Wins

Comprehensive database

The software includes 150 quizzes covering a large spectrum of cardiac arrhythmias from simple cases to challenging ones.

Multiple-Choice Questions

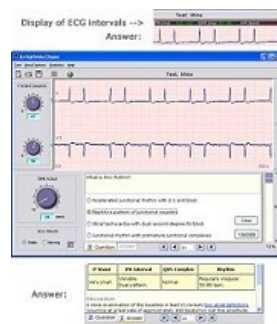
Each test presents 100 cases randomly selected from the database so that two tests will never look the same. This makes the questions less predictable and prolongs the software usage life. The quiz is organized into Multiple-Choice Questions with one correct answer. Answers are in the form of a web browser text format and include hyperlinks. The links allow emphasizing a particular finding by highlighting a specific segment of the ECG.

Digital ECG recordings

Among the benefits of digital signals versus images of ECG strips include accurate measurements of ECG parameters and fine-grain zooming capabilities. We think that the ability to modify the amplitude and time scales of the signals can help reveal details that otherwise would have been difficult to find.

Interactive user interface

The software is highly interactive with easy-to-use graphical controls that, among other things, allow the user to navigate the database, select the questions and answers, and modify the amplitude and time scales of the signal.



History and statistics

A test can be saved and completed later. The results of the saved tests are accessible and can be sorted by name, date, or score.

Limitations

The number of ECG leads is limited to two.

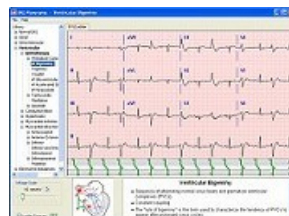
System Requirements: Windows 98/Me/NT(SP6)/2000/XP, Pentium III 500 MHz or equivalent, 64 MB RAM, 100 MB of free hard disk space, 800x600 minimum screen resolution.

[Cat.# EZ-3](#)

EKG Panorama - Wins

Description

EKG Panorama is a comprehensive and easily navigable reference library of 12-lead EKGs (two cases include one lead only). The EKGs are digital signals, not reproductions of EKG tracings. The cases are organized in a hierarchical structure similar to a familiar folder tree format. Each EKG is accompanied by a picture illustrating the cardiac condition and a synopsis. In some cases, a ladder diagram is included. The ladder diagram is a useful 2D representation that helps explain cardiac arrhythmias.



System Requirements: Windows 98/Me/NT(SP6)/2000/XP, Pentium III 500 MHz or equivalent, 64 MB RAM, 20 MB of free hard disk space, 800x600 (1027x767 or more is recommended).

[Cat.# EZ-4](#)

EKG - Wins

Key Features:

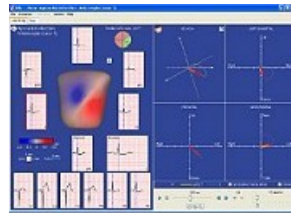
1. Realistic simulated body surface potential maps.
2. A learning section comprising 32 normal and pathologic dynamic vectorcardiograms.
3. Multimedia panel for the control of the animation.
4. Fifty 12-lead EKG tracings for practice.
5. Text summaries on the fundamental principles of electrocardiography and EKG diagnosis.

Vectorcardiography

The X, Y, and Z signals of the Frank-lead system are displayed in the form of vectorcardiograms in four different referential systems: 3D, frontal plane, horizontal plane, and left sagittal plane. A different color is assigned for each of the P wave, QRS complex, and T wave.

Body surface potential mapping

Body surface potential maps are generated using the heart dipole theory and a realistic torso model. The heart position is calculated to minimize the error between the simulated electric potential and the potential recorded by the chest electrodes.



Learning cases

The library consists of 31 real cases divided into five sections: normal variants (7 cases), myocardial infarction (12 cases), bundle-branch block (7 cases), ventricular hypertrophy (3 cases), and Wolff-Parkinson-White pattern (2 cases).

Test cases

Fifty standard 12-lead EKG tracings are included for practice. Navigation through the cases is straightforward and answers are provided.

Help

The help includes sections that introduce the basis of electrocardiography, some important concepts such as the cardiac dipole and the electrical axis of the heart, vector cardiography, and ECG diagnoses related to the learning cases covered in the software.

Limitation

One torso model that fits all cases is used to simulate the body surface potential mappings. Due to inter-individual variations in the thorax shape and chest electrode positions, the calculated electric potential does not always correspond to the recorded potential. However, the overall picture of the mappings during the time course of the electrocardiogram is preserved.

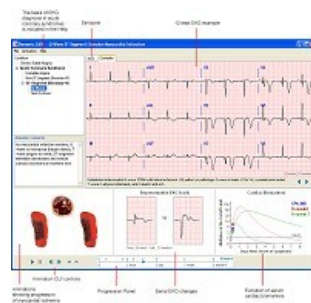
System Requirements: Windows 98/Me/NT(SP6)/2000/XP, 1GB processor, 128 MB RAM, 20 MB of free hard disk space, 800x600 (1027x767 or more is recommended), fast graphics card is recommended.

[Cat.# EZ-5](#)

Dynamic CAD – Wins

Key Features:

1. Topics treated include chronic stable angina, unstable angina, non-ST elevation MI, and Q-wave and non-Q-wave ST elevation MI.
2. Animations depicting the progression of myocardial ischemia and infarction along with the corresponding changes in EKG and serum cardiac biomarkers.
3. The animations are complemented by 12-lead EKG examples.
4. Up-to-date synopses.



Description

Immediate identification of acute coronary syndromes (ACS) is essential to improve outcome in patients with ischemic heart disease. Understanding not only the clinical picture of the acute events, but also their pathophysiology may improve the diagnosis of ACS.

Through interactive and realistic animations, Dynamic CAD software helps the user understand the basic concepts behind the evolution of EKG and serum cardiac biomarkers during myocardial ischemia and infarction. Specifically, the user will learn:

The difference between chronic stable angina and unstable angina.
 The difference between ST-segment elevation and non-ST-segment elevation myocardial infarction.
 The difference between Q-wave and non-Q-wave myocardial infarction.
 The dynamics of T-wave inversion.

System Requirements: Windows 98/Me/NT(SP6)/2000/XP/Vista. Pentium III 500 MHz or equivalent. 64 MB RAM. 20 MB of free hard disk space. 800x600 minimum screen resolution.

[Cat.# CH-23](#)

Principles of Electrocardiography - Wins

Target Audience: Principles of Electrocardiography is intended for all medical practitioners who need to diagnose cardiac disorders and/or need to interpret electrocardiograms and ECG rhythm strips.



Educational Objectives: On completing this program, the medical practitioner will be able to:

1. Describe how the electrical activity of the heart produces characteristic tracings in the various ECG leads.
2. Describe those aspects of cardiac electrophysiology and pathophysiology that are essential to ECG interpretation.
3. Accurately identify normal features and normal variations on electrocardiograms.
4. Describe how to produce a high-quality ECG tracing.
5. Describe the causes and ECG findings associated with:
 - a) left ventricular hypertrophy
 - b) right ventricular hypertrophy
 - c) atrial overloads
6. Describe a systematic approach to reading electrocardiograms.

System Requirements: Windows '98, '98SE, ME, NT4.0 sp6a, 2000 sp4+, or XP sp1+ (Home or Professional) (Windows 2000 or XP preferred), Pentium III - 1GHz or faster, 24X CD-ROM drive or faster, Video Card and Monitor capable of at least 1024x768 resolution; Sound Card and Speakers, Microsoft Mouse or compatible pointing device, Windows '98, '98SE, ME: 256MB RAM, or greater, Windows NT4.0 sp6a, Windows 2000 sp4+, or Windows XP sp1+ (Home/Prof): 512MB RAM, or greater, Run from CD-ROM: 1MB with CD-ROM, Full Installation: Amount varies with each product, Microsoft Internet Explorer 5.5 sp2 or later (IE 6 - sp1+ preferred) or Netscape Navigator 7.0.1 or later, Microsoft Java 5.00.3810 or Sun Java2 (JRE) 1.4.2_07, Internet Access with a 56K modem or faster (DSL, Cable, Broadband, etc.), Macromedia Flash 6 player or later, A media player* with codecs for ".mp3" audio and ".mpg" MPEG1 video/audio, Microsoft Media Player 9 and 10 cannot play movies from the CD-ROMs due to recent changes in Microsoft security protocols. The preferred media player for the MPEG movies is QuickTime.

[Cat.# CH-24](#)

ECG-Challenger Cases - Wins

You will rapidly read electrocardiograms and rhythm strips like the pros after using ECG-Challenger's interactive questions and atlas of ECG's, illustrations and rhythm strips for education and reference. A wide variety of cases are presented in the interactive questions which are integrated with more than 400 high-resolution images designed to challenge and increase your knowledge of cardiology and electrocardiography.

An easy-to-use interface is combined with immediate feedback and scoring to maximise your retention of the material and reinforce this vital knowledge you need to give the best possible care. The atlas of electrocardiograms

and rhythm strips in ECG-Challenger is an invaluable clinical reference tool offering you immediate access to a large image library for use in differential diagnosis.



Target Audience:

ECG-Challenger is intended for all medical practitioners who need to diagnose cardiac disorders and/or need to interpret electrocardiograms and ECG rhythm strips.

Educational Objectives:

The educational objectives of the ECG-Challenger training program are as follows. On completing the program, the medical practitioner will be able to:

1. Describe those elements of cardiac anatomy that are relevant to ECG interpretation.
2. Describe those aspects of cardiac electrophysiology and pathophysiology that are relevant to ECG interpretation.
3. Accurately identify normal features and normal variations on electrocardiograms.
4. Recognize all common electrocardiographic abnormalities.
5. Identify the common disease entities that can be recognized or suspected from the electrocardiogram, including:
 - Coronary artery disease
 - Arrhythmias
 - Conduction defects drug, electrolyte and metabolic problems
 - inflammatory cardiac conditions and certain congenital and valvular cardiac defects.
 - Relate electrocardiographic findings to their associated history and physical findings.
 - Recognize common rhythm abnormalities from the ECG rhythm strip.

System Requirements: Windows '98, '98SE, ME, NT4.0 sp6a, 2000 sp4+, or XP sp1+ (Home or Professional) (Windows 2000 or XP preferred), Pentium III - 1GHz or faster, 24X CD-ROM drive or faster, Video Card and Monitor capable of at least 1024x768 resolution; Sound Card and Speakers, Microsoft Mouse or compatible pointing device, Windows '98, '98SE, ME: 256MB RAM, or greater, Windows NT4.0 sp6a, Windows 2000 sp4+, or Windows XP sp1+ (Home/Prof): 512MB RAM, or greater, Run from CD-ROM: 1MB with CD-ROM, Full Installation: Amount varies with each product, Microsoft Internet Explorer 5.5 sp2 or later (IE 6 - sp1+ preferred) or Netscape Navigator 7.0.1 or later, Microsoft Java 5.00.3810 or Sun Java2 (JRE) 1.4.2_07, Internet Access with a 56K modem or faster (DSL, Cable, Broadband, etc.), Macromedia Flash 6 player or later, A media player* with codecs for ".mp3" audio and ".mpg" MPEG1 video/audio, Microsoft Media Player 9 and 10 cannot play movies from the CD-ROMs due to recent changes in Microsoft security protocols. The preferred media player for the MPEG movies is QuickTime.

[Cat.# CH-25](#)

Challenger Heart Sounds - Wins

Challenger Heart Sounds is a complete course in cardiac auscultation, which contains recordings of heart sounds and murmurs from actual patients. No heart sound simulators are used.

The program is authored by world-famous cardiography expert Jules Constant, MD, FACC and is based on his forty years of practice. Challenger Heart Sounds covers the essentials of cardiac auscultation.

Target Audience:

Challenger Heart Sounds is intended for practicing primary care and emergency physicians, as well as cardiologists seeking a comprehensive review.

Educational Objectives:

On completing this program, the medical practitioner will be able to:

1. Identify normal heart sounds on auscultation.
2. Identify all types of clinically significant abnormal heart sounds on auscultation.
3. List sites for auscultation of abnormal heart sounds.
4. List methods for differentiating abnormal heart sounds to aid in diagnosis.

System Requirements: Windows '98, '98SE, ME, NT4.0 sp6a, 2000 sp4+, or XP sp1+ (Home or Professional) (Windows 2000 or XP preferred), Pentium III - 1GHz or faster, 24X CD-ROM drive or faster, Video Card and Monitor capable of at least 1024x768 resolution; Sound Card and Speakers, Microsoft Mouse or compatible pointing device, Windows '98, '98SE, ME: 256MB RAM, or greater, Windows NT4.0 sp6a, Windows 2000 sp4+, or Windows XP sp1+ (Home/Prof): 512MB RAM, or greater, Run from CD-ROM: 1MB with CD-ROM, Full Installation: Amount varies with each product, Microsoft Internet Explorer 5.5 sp2 or later (IE 6 - sp1+ preferred) or Netscape Navigator 7.0.1 or later, Microsoft Java 5.00.3810 or Sun Java2 (JRE) 1.4.2_07, Internet Access with a 56K modem or faster (DSL, Cable, Broadband, etc.), Macromedia Flash 6 player or later, A media player* with codecs for ".mp3" audio and ".mpg" MPEG1 video/audio, Microsoft Media Player 9 and 10 cannot play movies from the CD-ROMs due to recent changes in Microsoft security protocols. The preferred media player for the MPEG movies is QuickTime.



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