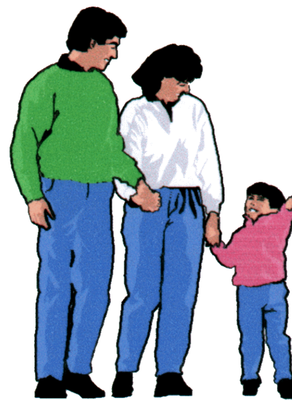
M Medical
E Education
D Developed
By
C Computer
A Aided
L Learning

23



Community Heart Disease Prevention System

Leading the way in improving Health Communication

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RISK for Health Professionals

A Coronary Heart Disease Prevention Program

The RISK CHD computer program is a comprehensive, yet easy to use method of organising a heart disease prevention program in primary care.

It includes:

1. Risk assessment.
2. Patient education, both visually and with personalised advice leaflets.
3. Comparative scores of individuals risk factors both changeable and fixed.
4. A Framingham type % Risk of event.
5. Full recording for reassessment.

IT MANAGES ALL THIS WITHIN THE LIMITATIONS OF THE AVERAGE PRIMARY CARE CONSULTATION.

It is designed to enable the average GP, nurse or other primary care professional to offer high quality heart disease prevention without heavy investment in time or money. This will result in better health for your patients and reduced costs in drugs and hospital bills for your practice and PCG.

The program has been designed to make life easier by doing the assessment and indicating directly the area of concern so allowing the professional to concentrate on the patient. This program is not designed just for high-risk patients but as a community wide education program for all people from 20 years upwards. It is therefore designed to avoid the development of heart disease not just as secondary prevention.

When used together with the ***self-assessment Tutor*** and a ***hospital version*** it can give an area wide life style intervention package, something which is lacking in most areas of the country.

Results from 2 years use in general practice:
Patients assessed 1,700
Reassessed 430
Of those reassessed:
18% reduction in smoking
6% reduction in average blood pressure
35% decrease in excess weight
22% reduction in alcohol excess
Cholesterol levels reduced by **8%**
RISK score reduced by average of **1.38**

The Computer Program

A brief summary of how the program works.

The program is Windows based, and will run independently on any compatible Windows system.
It is fully auto loading and can work on a network system.
It can be integrated into existing clinical systems - dependant on co-operation of clinical supplier.

How it is used

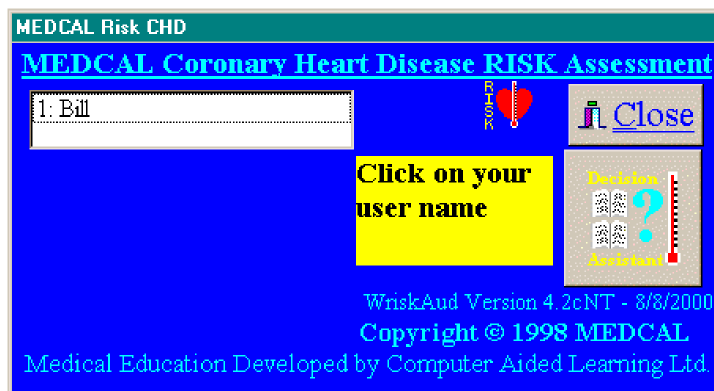


Fig 1. Logon screen

When you to wish to use the program you click on ICON with the mouse and the program will appear over your existing screen. You log on using the screen shown. *(fig 1)*

Then to find existing patient enter details on Select patient screen *(fig 2)*
Note: The integrated version enter details from the clinical system automatically

MEDCAL Risk CHD
Search for patient by
New NHS Number
Name(s)
Analyse
New NHS No.
Amend
Exit
Surname BLACKMORE
Forenames WILLIAM SPENCER
Date of Birth 16/02/1948
Hide
Deceased
Sex Male

Fig 2. Select patient screen

When the patient is on the system you complete the analysis form by entering the risk factors (fig 3)

The program calculates and displays the risk factors as you go along.

Fig 3. Patient analysis screen

Using RISK program as educational tool.

The program is most effectively used when the analysis is performed with the patient watching the data entry. The patient sees which results entered cause the biggest effect on the thermometer and the colour changes.

When you have entered all the data, you discuss the overall risk with the patients and plan with them which of their risk factors should be tackled, demonstrating the effect of each.

You should find which risk factors are most likely to be improved and tackle those first as initial success in some areas will make it much easier to tackle other areas afterwards.

Once you have agreed a plan with the patient you should show the target you are asking the patient to address and arrange a date for repeating the analysis and assessing their success at reaching their target. If data was missing at the first analysis it may require a second consultation to complete the analysis but partial data can still be used for educational purposes.

You will have noted another feature on the analysis screen - a bar at the bottom.

This is a % risk score using the Framingham(1) equation and acts in the following ways.

You set the two % risk of an event in the next 4-10 years levels. The first is set to a level greater than which you would recommend aspirin, the second when you would recommend lipid lowering agents.

A solid bar occurs without a % if a history of MI Angina or stroke is entered reminding you that in these patients both therapies should be considered no matter what other factors are present.

When you have finished your analysis you press the *save & print* button.

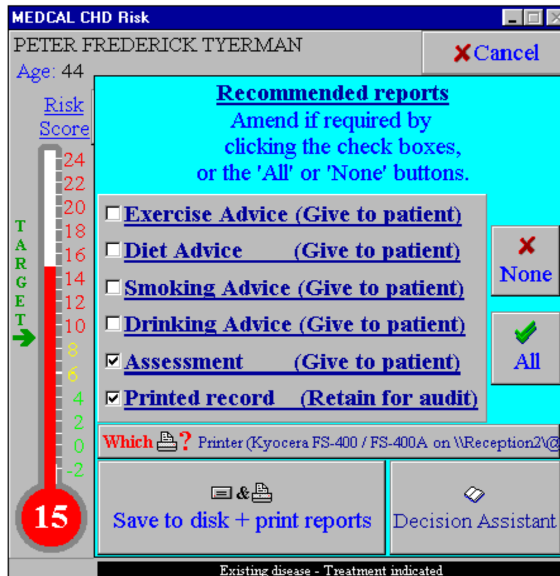


Fig 4. Advice leaflets analysis screen

This moves you to the advice leaflets screen *(Fig 4).* The computer recommends the advice leaflets to be printed for this patient. You can change the leaflets if you so desire.

This screen also allows for selection of a printer. Usually however the program will have preselected your usual printer. The process is completed by pressing *save and print*. You can then hide the program, or process another patient.

The button marked ***Decision Assistant*** takes you to a series of help pages where your personal, practice, or area treatment advice can be entered so that it is always available when you are using the program, but is totally within your own control and not imposed from outside.

Note: These help files can include any subject you care to enter. They are not limited to the areas of CHD.

1. Anderson KM, Odell PM ,Wilson PWF, Kannel WB. Cardiovascular disease risk profiles. Am Heart J 1990;121:293-8

If you would like further information about this system please contact:

MEDCAL
The Grange, Cote Lane
Thurgoland, Sheffield, S35 7AE
Tel: 01142 887264
Website: www.medcal.co.uk
E-mail: Sales@medcal.co.uk
Helpline: 0776 5075488
(Mon to Fri 11am – 2pm)

RISK CHD Results from the Rotherham Road Medical Centre

Date audit produced 29/10/2001

Patients assessed: 2721 **First assessment date:** 01/01/1998
Assessments completed: 4149 **Last assessment date:** 29/10/2001
Average Age: 51.45

Current Status

This is the accumulated current results for the above patients and is equal to 78% of the eligible patients (those over 25).The distribution of the population assessed closely matches the distribution of the whole population in the locality with the exception of the youngest group which is smaller.

Age	Total	Female	Male
<25	292	172	120
>25,<35	445	219	226
>35,<45	460	229	231
>45,<55	486	229	257
>55,<65	385	194	191
>65,<75	420	230	190
>75	233	125	108
Total	2721	1398	1323

SMOKING

	Smoking	%
Not recorded	10	0
Non smokers	1274	47
Ex smokers	480	18
<20 a day	632	23

BMI

Number with current BMI >27	1085
Number with current BMI>35:	204
Current Average BMI:	26.14

Blood pressure

Systolic >140:	866	31%
Diastolic >90:	344	12%
Systolic >160:	230	8%
Diastolic>100:	73	2%
Avg Systolic BP:	134	

Alcohol

Number with excess alcohol consumption: 310

Risk scores

Average Risk score 5.43

Lipids

Number with current Cholesterol	1080	Average current Cholesterol	5.81
Number with current HDL:	970		
Number with current Triglycerides:	982	Average current Triglycerides:	2.00

These figure show the overall coverage and results from 3 years 9 months and suggest population coverage over a 5 year period is realistic target for any practice using this system.

RISK Results for Rotherham Road Medical Centre

Patients assessed: 2,721.00 First assessment date 29/09/1998 Date produced 29/10/2001
Assessments completed 4149 Last assessment date: 29/10/2001
Avg time first to last assessment: 463 days
Assessments on patients assessed on>1 occasion **858 patients**

Smoking	Start	%	Finish	%
Not recorded	0	0.00	0	0.00
Non smoker	301	35.08	329	38.34
Ex smoker	216	25.17	256	29.34
<20 a day	214	24.94	192	22.38
>20 a day	125	14.57	81	9.44

Each person stopping smoking reduces their coronary risk by 25% *British Heart Foundation*

A reduction of 66 smokers = to 19%

Blood pressure	Start	%	Finish	%
Systolic BP >140	551	64.22%	354	41.26%
Diastolic BP>90	316	36.83%	128	14.92%

Each 5mg reduction in diastolic BP gives a 16% reduction risk of CHD *British Heart Foundation*

Diastolic BPs improved: 446

Systolic BPs improved: 444

Average Systolic BP:	151		140
Average Diastolic BP:	88.83		82.34

BMI	Start	Finish
BMI >27:	508	464
BMI>35:	116	101
Average BMI:	28.88	28.16

No with reduced BMI 350

No with excess BMI reduced by 26.67%

Alcohol	Start	Finish
Excess alcohol use:	127	94

A reduction of 26% in people over-using alcohol

Lipids (Number measured: 705)	Start	Finish
Cholesterol	6.28	5.86
Average HDL	1.77	1.45
Average Triglycerides	2.38	2.09

No with lowered cholesterol 322

Reduction in cholesterol level 7%

No with lowered triglycerides 322

Each 1% decrease in cholesterol gives a 2-3% reduction in CHD risk ***British Heart Foundation***

Touch Screen Health Education

The touch-screen Tutor is designed to give personalised health education to patients, specific to their own circumstances. The program currently performs a risk assessment of coronary heart disease based on the RISK CHD program for GPs and nurses, which is also available from MEDCAL.

In a General Practice of 5,200 patients, over 1,000 assessments were made in the first 12 months. Leading to a likely cost per assessment of £1 per person. Together with reported life style changes this makes the Tutor a highly cost effective and easy to implement method of improving the heart health of an areas population. Compared with other smoking cessation methods it proves as cost effective, or more, than other strategies currently used and recommended (see comparison data later in this folder), *and* it covers all the other risk factors as well.

Future developments include education modules on alcohol, depression, osteoporosis fracture prevention, and teenage health.

Our touch screen products are designed for use in many places including supermarkets, clinics - in fact most public places. Together with the RISK CHD primary care program, and the Hospital and Rehabilitation program, they produce a comprehensive Heart Disease prevention program for a whole area and should produce a substantial reduction in CHD at a very modest investment in NHS resources.

AutoWeighing

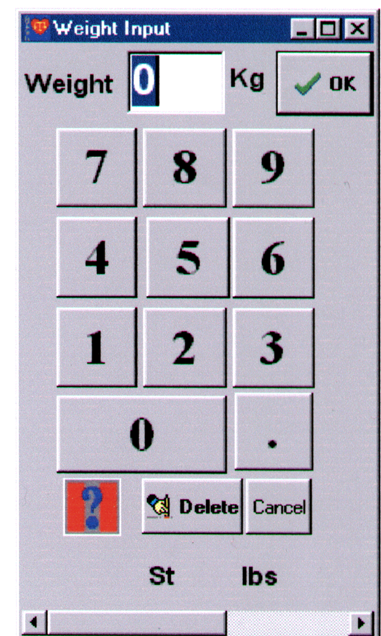
Stainless steel = Easy cleaning
No moving parts = No maintenance

- *No Appreciable Running Costs!*
- *Likely cost per weighing: 2p*
- *Expected Life: 5 – 10 years*
- *Expected total cost over 5 years ...only £200+vat*

Direct linking of scales to your computer can make weighing quicker and easier. Just plug the scales into the computer, load the software and off you go. The scales we offer, together with our linking software, enable weights to be entered just by standing on them.

The link scales are also ideal for baby clinics where the baby can be weighed in mother's arms. The computer does the sums when the baby is passed to the nurse so there are no problems with wriggling babies, or reluctant toddlers.

The linking software puts weights directly into your medical, or weight records with no keyboard transfer, so there is less chance of error. Both metric and imperial weights are displayed to save time on conversion.



The interface used to enter the weights automatically uses the scales if present, but still allows for entry using a keyboard, mouse, or touch screen. This universal weight entry program is easily integrated into other programs so it can be used as your universal weight entry method.

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MEDCAL RISK CHD and SMOKING

As a smoking cessation program ***Risk CHD*** has had outstanding results comparing favourably as shown below in both effectiveness and cost effectiveness with other smoking cessation interventions. This table is based on the same costings and assumptions used in *Smoking Cessation Guidelines and their Cost Effectiveness*1. The ***RISK CHD*** data is produced by the audit programs plus our costing of it use.

Face to face interventions	***cost per life year saved***
Brief advice GP(1)	*£112.00*
Brief advice GP+leaflet(1)	*£142.00*
Brief advice GP+leaflet+NRT(1)	*£173.00*
Brief advice GP+leaflet+NRT and specialist cessation service(1)	*£160.00*
Risk using those reassessed as basis(a)	*£24.00*
Risk using all as total assessments and reassessed for result(b)	*£80.77*
Other interventions	
Risk touch screen(c)	*£74.00*
Risk in practice(b+c)	*£148.00*
No smoking day (estimated effect) (1)	*£22.00*
Quit & Win programmes (lowest cost) (1)	*£542.00*

1Smoking Cessation Guidelines and their Cost Effectiveness. M Raw, A McNeill, R West Thorax 1998; 53

a. This is costing based on all patients who were assessed and later reassessed for changes using ***MEDCAL RISK CHD*** programme using same pricing structure as (1)

b. This is costing based on all patients assessed but using smoking cessation figure from those reassessed (ie the assumption that none of those not yet reassessed has stopped smoking)

c. This is costing for the touch screen self assessment. Uses cost of machine assuming 3 year lifetime. Smoking cessation rate used is that shown in our research.

b+c This cost result if you assume all users of touch screen also complete the ***Medcal Risk CHD*** practice program (the worst possible scenario worst results maximum costs) .

DISCUSSION

These results show that on the basis of the results achieved at Rotherham Road Medical Centre ***RISK CHD*** in either form or combined, achieves smoking cessation results as good as the most effective interventions from *Smoking Cessation Guidelines and their Cost Effectiveness*1 and therefore the program would be justified on smoking grounds alone.

It would seen likely that the combined program would be likely to achieve a costing per life saved of less than £100 so being the most cost effective program when compared with those in the review article.

Rotherham Road Medical Centre Results

Risk costing those reassessed basis		Rates		
433	reassessments	£1.74	per person	£753.42
433	leaflets	£0.25	per person	£108.25
433	patient time	£0.61	per person	£264.13
Allowing extra 4 minutes for assessment			***Total***	**£1,125.80**
Number stopped smoking		**31**		
Life years saved		**£47.74**		
cost per life year saved		**£23.58**		

Risk costing using those reassessed for smoking stopped but total assessed as basis				
870	reassessments	£1.74	per person	£1,513.80
1740	leaflets	£0.25	per person	£435.00
870	nurse assessments	£1.00	per person	£870.00
1700	patient time	£0.61	per person	£1,037.00
Allowing extra 4 minutes for assessment			***Total***	**£3,855.80**
Number stopped smoking		**31**		
Life years saved		**£47.74**		
cost per life year saved		**£80.77**		

Risk costing using touch kiosk		(cost over 3 years)	£6,462.50	
1200	assessments	£1.80	per person	£2,154.17
1200	leaflets	£0.25	per person	£300.00
1200	patient time	£0.61	per person	£732.00
Allowing 7 minutes for assessment			***Total***	***£3,186.17***
Number stopped smoking		**27.96**		
Life years saved		**43.0584**		
cost per life year saved		**£74.00**		

Risk community inc touch kiosk			
Health professional Risk			£3,855.80
Touch Risk			£3,186.17
		Total	**£7,041.97**
Number stopped smoking	**31**		
Life years saved	**47.74**		
Cost per life year saved	**£147.51**		

The £ rates for Patient and Health Professional time are those from

"Smoking Cessation Guidelines and their Cost Effectiveness."

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"RISK CHD"
The MEDCAL program for assessing the risk potential of Coronary Heart Disease
FREQUENTLY ASKED QUESTIONS

What research is the program based on?
RISK CHD uses two methods of assessing and displaying a patients risk factors.
1. The relative areas and score are based on the scoring system used by the Dundee disk, which in turn was derived from the Scottish Heart Health Study.
a) Smith WCS, Tunstall-Pedoe H Crombie IK, Tavendale R. Concomitants of excess coronary deaths-major risk factor and lifestyle findings from 10359 men and women in the Scottish Heart Health Study. Scot Med. J i989;34:505-5
b) Tunstall-Pedoe H. The Dundee coronary risk-disk for management of change in risk factors. BMJ 1991:303:744-7.
2. The treatment bar percentage is based on the Framingham Equation.
Anderson KM, Odell PM Wilson PWF, Kannel WB. Cardiovascular disease risk profiles. Am Heart J 1990; 121:293-8

Why did you use the Scottish Heart Study rather than the Framingham work?
When we first developed this program, the Framingham work was not freely available in this country. We developed it at the time that the Dundee disc was produced, and used this to check our results. The relative Risk score is much more useful in patient education, and so we continued to use it. When the Framingham work was available we found it did not significantly affect our program, so we added it to calculate absolute risk for drug intervention, but left the patient education part unchanged.

How does your program use the Framingham study equation?
The Framingham work produces an equation, which evaluates the chance of an individual getting a cardiac event over a period of time. It does not, however, allow you to change that result when the patient has taken your advice. To do so would not be a provable effect since you have immediately gone outside the parameters of the data available from the study. This is because the work is an observation study, and not a trial of the effects of treatment. While this is very helpful in understanding the risks at a given point, it does not translate well into a patient education program, so we use it to calculate risk events percentage over time.

How does your program use the Scottish study?
Our program is a patient education program designed for the whole community. It covers all patients before, and when on, treatment for coronary heart disease risk factors. This requires a different approach, as clearly the patient is interested in how they can improve their health, and reduce their risk of a heart attack - not in a comparison with somebody else.
We have also found that the majority of patients do not easily understand the meaning of percentages. If you present the data as a percentage risk, in most cases you are not effectively communicating with the patients. Therefore, the RISK program is designed to simplify the presentation of information in a way the majority of patients will understand.

Who is the program designed for?
RISK CHD is designed for use in the whole community. It comes in several versions to cover the whole community. These are: -

1. Community Risk: A touch screen based program for use by patients unsupervised. It therefore has a simplified version of the program excluding some factors that patients do not usually have results for, unless they had already consulted a health professional.

2. Risk CHD: This is the main program for health professionals, and is suitable for all professionals - from secretary to consultant. This version is suitable for the majority of patient contacts with a professional.

3. Risk CHD Hospital: A slightly modified version of the above to suit the hospital environment.

Why use the thermometer and colour scheme?
The visual reinforcement of advice given in consultation has proved to be a major factor

in the effectiveness, and recall, of the advice by patients. After much work we found that the traffic-light colours were most effective in indicating the level of each individual risk factor, and the thermometer (plus colour) has proved to be very effective in indicating effects on health. It uses the well-known fact that high temperature in health is bad, and lowering it is good. Since the format of advice given by RISK CHD fits in with previous knowledge, it thus helps with memory reinforcement.

Why do you not use a chance of getting an event in a period of time in your program?
We do offer this as a % risk using Framingham but it is not used in the main part of the program. The use of tables, such as those produced in Sheffield and New Zealand, which predict your chances of getting an event in the next X years are a very useful community research tool. However, we have found them of little direct use in patient education.
They are really designed for the doctor to decide whether to offer drug therapy and this is only a very small part of the Risk CHE) concept. It is also difficult and time-consuming to use them. The recent Heart Health Strategy publication has some 32 tables to cover a population, each of which needs to be an A4 size sheet. Although our strategy for making the program easy to use may mean the occasional patient may get advice which is only 95 % accurate the benefits in enabling the program to be used by professionals in all consultations are out weighed by these slight disadvantages.
A 95% accurate usable program is far more effective than a 100% accurate, but unusable program!

What strategies make your program more effective as an educational tool?
The program uses visual clues, change-demonstration, colour reinforcements, action effects, and written reinforcements.
· Visual clues are colour changes, and movements of the thermometer, according to risk factors.
· Change demonstration is the changing of the thermometer, and colours, according to changes you make in your life style.
· Colour reinforcements are red, orange, and green as with traffic-lights.
· Action effects are when the changes suggested give changes on the screen.
· Written reinforcement is the patient receiving a personalised printed copy of the advice given.

Why print Advice?
Patients take notice and respond to it more readily. They keep the advice sheets and refer back to them.

When can Risk be used?
Risk can be used with all patients from 20 years upwards. In all cases it will give advice as to how they can decrease their risk of Coronary Heart Disease. This will prove more important in some than in others, or course.

What computer hardware is required to use the program?
The program will run on any Windows-based computer. It can also run on a local network. It should not interfere with any program running on the computer at the same time. It is designed to run with other programs, and interface to clinical general practice systems. We supply to the clinical supplier full details of how this can be done.

What do the percentages signify?
The program has two user set Framingham risk percentages. These can be used to indicate when drug therapy is advised i.e. 15% 10 year risk for aspirin; 30% 10 year risk for statin therapy.

What about Ethnic variations in risk factors.
As the main risk assessment includes loading for family and relatives with diabetes, as well as the Framingham factors, it should prove much more accurate in predicting ethnic risk as it is the absence of these factors in Framingham that makes it underestimate risk in these populations.

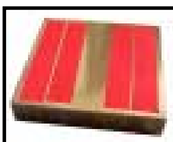
MEDCAL LTD

Price List

October 2001

Standard Tutor

Elite Tutor



Scales

		NHS	PRIVATE
SOFTWARE			
Risk CHD ***(Version 5)***	RISK-P5	**N/A**	**£100**
HARDWARE			
Community Tutor ***(Standard)***	CTCHDG	**£3,800**	**£4,000**
Community Tutor ***(Elite)***	CTCHDSG	**£5,000**	**£5,250**
Community Tutor ***(Portable)*** *Special order: price dependent on spec.*	CTCHDPT	**P.O.A.**	**P.O.A.**
2nd and 3rd Year On-site Warranty	WARR2/3	**P.O.A.**	**P.O.A.**

PRICES FOR TUTORS INCLUDES:

- ***Delivery and set-up***
- ***One-year on-site warranty***
- ***Epson Colour Printer*** *(Manufacturers warranty applies)*

OTHER HARDWARE ITEMS			
Scales ***(Integrated Serial Interface)***	SP200-10	**£250**	**£300**
Blood Pressure Unit	BPU001	**T.B.A.**	**T.B.A.**
Cuffs for Blood Pressure Unit	BPU-C1	**T.B.A.**	**T.B.A.**

Negotiable discount on quantities of 10 units and above.
Scaled rates on 100 units and above.

ALL THE ABOVE PRICES ARE SHOWN EXCLUSIVE OF VAT.

Discounts are available for PCCS members multiple purchases

Need specialised touch screen software?
Contact Dr P F Tyerman at MEDCAL!

Customised colour schemes & security features are available! Contact MEDCAL for details!

Software for Depression, Osteoporosis, and Alcohol abuse - now under development!

MEDCAL LTD
Community Tutor Enquiry Form

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E-mail: Sales@medcal.co.uk
Helpline: 0776 5075488
(Mon to Fri 11am – 2pm)

Name ______________________

Address ______________________

____

____

Telephone ______________________

E-Mail ______________________

Please send me further information on:

- ☐ Medcal Community Tutors in general
- ☐ Standard Tutor
- ☐ Elite Tutor
- ☐ Special high protection version of Tutors
- ☐ RISK CHD Program for Health Professionals
- ☐ *"I would like to receive details of new Medcal products when they become available."*

I am intersted in purchasing:

Now ☐ 3 months ☐ 6 months ☐ 12 months ☐

Standard Tutor

Elite Tutor

Thank you for your interest!