

McGill Cardiovascular Health Improvement Program



Dr. Steven Grover - Medical Director

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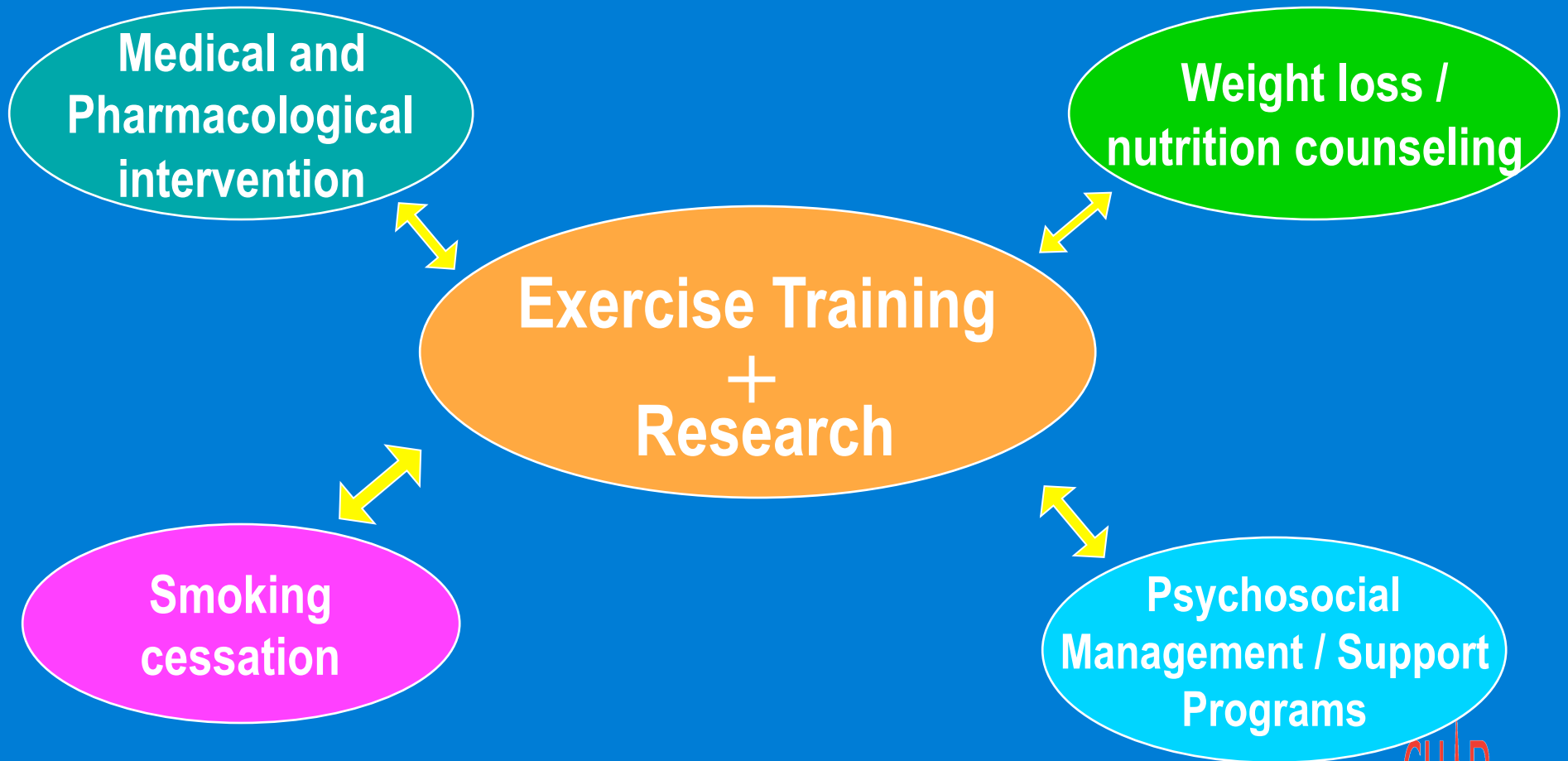
Founded and staffed by physicians and scientists from the McGill University Teaching Hospitals in 1996.



CHIR

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CHIP - A Multidisciplinary Team Approach



CHIP

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Case Study - Does it work?

- Patient A is a 51 year old male non-smoker.
- Single vessel bypass, stroke, aortic valve replacement, aortic aneurysm graft
- 12 week supervised program.
- No medication changes.

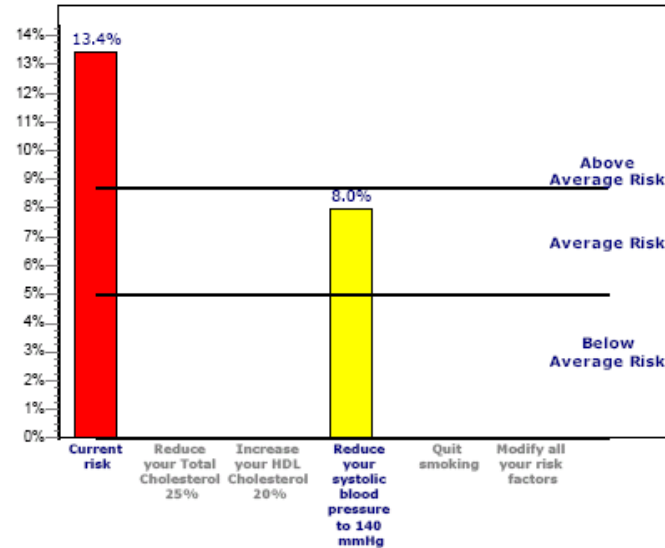


Name: Patient A
 Clinic: CHIP - Montréal
 Consultation Date: 5/3/2006

Age: 49 years
 Gender: Male
 Height: 5 feet 11 inches
 Ideal Body Weight: 150 to 179 pounds

CVD Present	Yes
Blood Cholesterol (mmol/L)	
Total Cholesterol	3.65
LDL Cholesterol	1.92
HDL Cholesterol	1.27
Total-HDL Ratio	2.87
Blood Pressure (BP-mmHg)	
Systolic	170
Diastolic	105
Using BP Medication?	No
Cigarette Smoking	No
Diabetes	No
BMI (kg/m ²)	32.1
Weight (lb)	230
Waist (inches)	.0

10-Year Risk of Cardiovascular Disease



Cardiovascular Age 55.7

Your risk of cardiovascular disease (heart attack and fatal coronary events) over the next ten years is 13.4%. Your estimated cardiovascular age is 55.7 years.

You have one modifiable cardiovascular risk factor: Blood Pressure.
 •Reduce your systolic blood pressure to 140 mmHg and lower your risk to 8.0%.

By reducing your systolic blood pressure to 140 mmHg, you can also lower your cardiovascular age to 54.8 years.

These results represent average risks. The actual experience of individual patients will vary.



Name: Patient A Age: 49 years
 Clinic: CHIP - Montréal Gender: Male
 Consultation Date: 8/25/06 Height: 5 feet 11 inches
 Ideal Body Weight: 150 to 179 pounds

	5/03/06	8/25/06	
CVD Present	Yes	Yes	
Blood Cholesterol (mmol/L)			
Total Cholesterol	3.65	3.44	Better
LDL Cholesterol	1.92	1.64	Better
HDL Cholesterol	1.27	1.43	Better
Total-HDL Ratio	2.87	2.41	Better
Blood Pressure (BP-mmHg)			
Systolic	170	130	Better
Diastolic	105	80	Better
Using BP Medication?	No	No	
Cigarette Smoking	No	No	Unchanged
Diabetes	No	No	Unchanged
Body Mass Index (kg/m ²)	32.1	29.4	Better
Weight (pounds)	230.4	210.6	Better
Waist Circumference (inches)	.0	.0	Unchanged

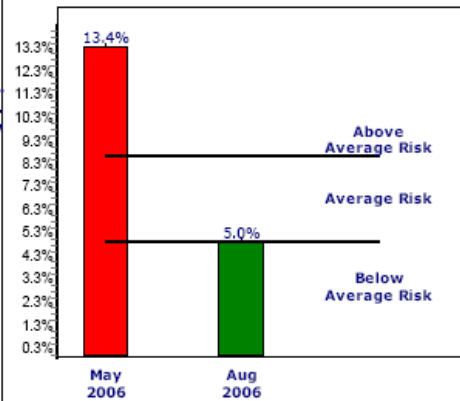
Your overall cardiovascular risk has been modified due to the following changes in your risk profile:

Significant Positive Changes

- Your Total Cholesterol has decreased by 5.8%
- Your HDL Cholesterol has increased by 12.6%
- Your Systolic Blood Pressure has decreased by 23.5%
- Your Weight has decreased by 8.6%.

Significant Negative Changes

10-Year Risk of Cardiovascular Disease



As a result of these changes, your cardiovascular age has DECREASED from 55.7 to 50.8 years. Your 10-year risk of heart attack and fatal coronary events has DECREASED from 13.4% to 5.0%.

Fitness improved from 7.5 to 10.5 METS (40% increase)

(N=384)

Name: CHIP 2007 Age: 59 years
Clinic: McGill - CHIP Gender: Male
Consultation Date: 08/08/2007 Height: 5 feet 10 inches
Ideal Body Weight: 139 to 174 pounds

	04/04/2007	08/08/2007	
CVD Present	Yes	Yes	
Blood Cholesterol (mmol/L)			
Total Cholesterol	4.36	4.25	Better
LDL Cholesterol	2.37	2.30	Better
HDL Cholesterol	1.15	1.19	Better
Total-HDL Ratio	3.79	3.57	Better
Blood Pressure (BP-mmHg)			
Systolic	129	123	Better
Diastolic	80	76	Better
Using BP Medication?	Yes	Yes	
Cigarette Smoking	No	No	Unchanged
Diabetes	No	No	Unchanged
Body Mass Index (kg/m ²)	26.8	26.4	Better
Weight (pounds)	187.0	184.6	Better
Waist Circumference (inches)	37.8	36.6	Better

25% lost > 5lbs
10% lost > 10lbs

Your overall cardiovascular risk has been modified due to the following changes in your risk profile:

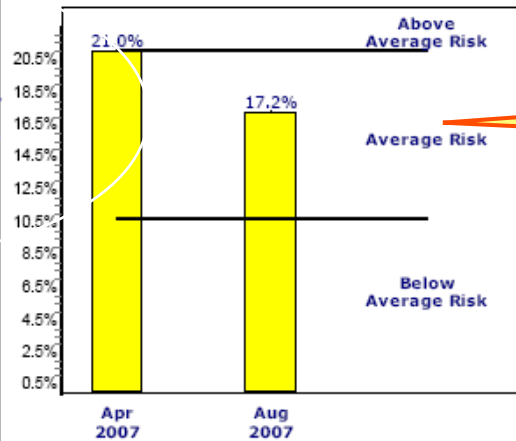
Significant Positive Changes

- Your Total Cholesterol has decreased by 2.5%
- Your HDL Cholesterol has increased by 3.5%
- Your Systolic Blood Pressure has decreased by 4.7%.

Significant Negative Changes

Risk factor changes

10-Year Risk of Cardiovascular Disease



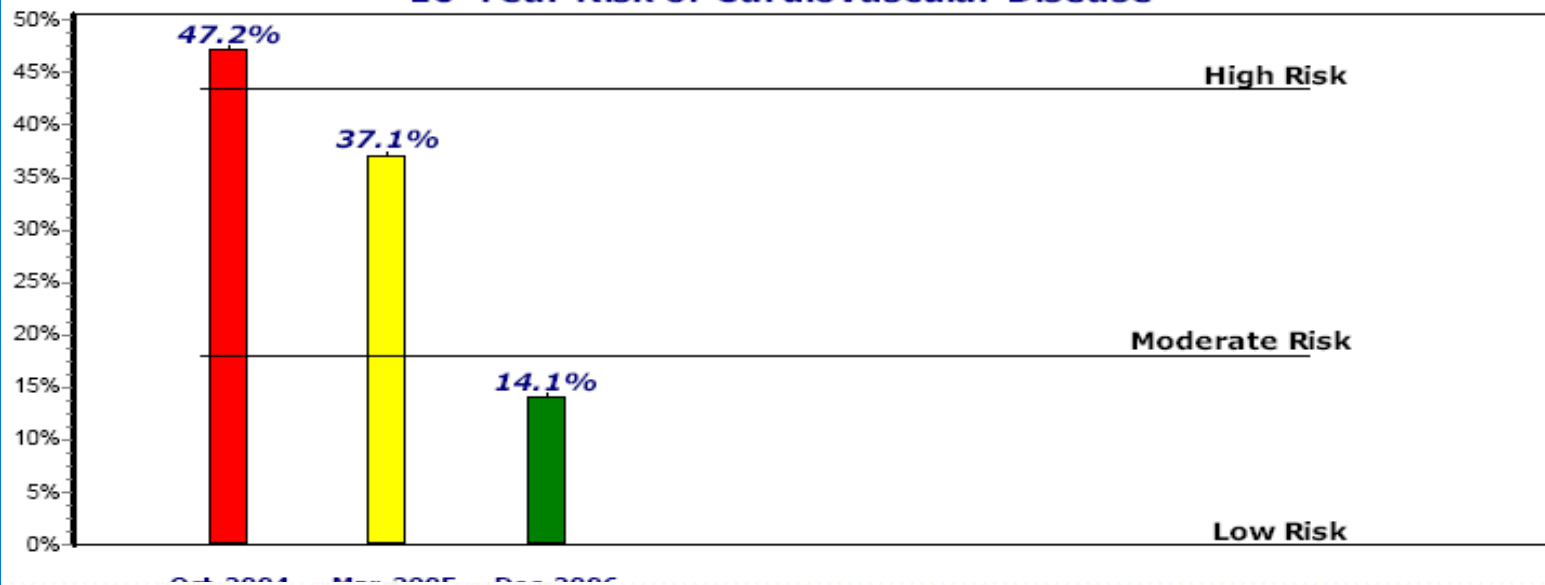
18% risk reduction

CV age improved by 1 year

As a result of these changes, your cardiovascular age has DECREASED from 61.2 to 60.3 years. Your 10-year risk of heart attack and fatal coronary events has DECREASED from 21.0% to 17.2%.

CVD Risk Factors	Oct-2004	Mar-2005	Dec-2006
CVD Present	Yes	Yes	Yes
Blood Cholesterol (mmol/L)			
Total Cholesterol	3.45	4.16	3.43
LDL Cholesterol	2.00	2.76	1.79
HDL Cholesterol	0.93	1.00	1.52
Total-HDL Ratio	3.71	4.16	2.26
Blood Pressure (BP) (mm Hg)			
Systolic	140	114	114
Diastolic	75	84	84
Using BP Medication?	Yes	Yes	Yes
Cigarette Smoking	No	No	No
Hyperglycemia	No	No	No
Body Mass Index (Kg/m ²)	33.6	32.2	29.1
Weight (Kg)	97	93	84

10-Year Risk of Cardiovascular Disease



As a result of these changes, your cardiovascular age has DECREASED from 70.4 to 69.9 years. Your 10-year risk of heart attack and fatal coronary events has DECREASED from 47.2% to 14.1%.

DR

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CHIP Mission and Focus

Provide the highest standard of comprehensive, individualized care for both primary prevention and secondary rehabilitation.

Programs

- **60% - 70% Cardiac Rehabilitation (CVD)**
 - Heart Attacks – Revascularization - Heart Failure
- **25% - 30% Prevention**
 - Hypertension - High Cholesterol - Diabetes
 - Inactivity - Obesity – Stress - Depression
- **5% - 10% Cancer Rehabilitation**



CHIP for Teens

Intensive program for obese teens at risk of developing CVD or diabetes.

Objectives

- Achieve a healthy weight
- Incorporate physical activity into daily living and improve fitness level
- Improve body image and increase self esteem
- Make healthier food choices
- Provide social / group support



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CHIP Funding

- **Not-for-Profit Organization**
 - Physician visit under Medicare
 - Fee for patient programs due to zero funding from university, hospitals or government (covers 50% - 60%)
 - Partially subsidized by money raised through individual / philanthropic donations, sponsorships and fundraising activities (covers 40% - 50%)
- **Financial assistance available – up to 80% of program cost**
- **Group / Individual Insurance Plans may cover some or all of program fees**

CHIP Successes and Challenges

- Community initiative
- Outside of publicly funded health model
- Off site centre
- Set up of automatic referral system upon discharge
- Flexible programming
- Positive health impact on CHIP Grads
- Cost effective (Lowensteyn et al)
- No financial support
- Not part of usual and essential care = low referral
- Stronger message of importance by MD to patient
- Only 15% of eligible patients take advantage of programs
- Perception that “fee for programs” is private health care
- Physician shortages

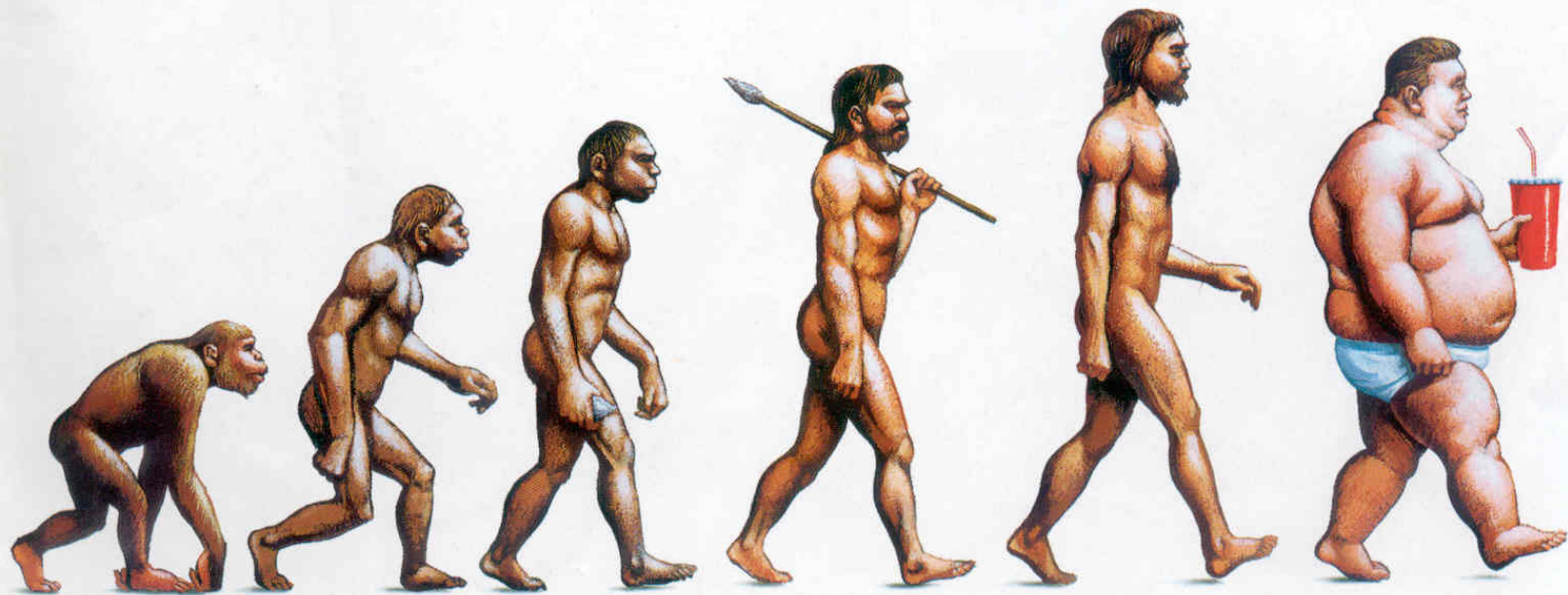
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Improving Patient Outcomes

Prevention and Rehabilitation Programs

- Reduce burden on health care system by decreasing visits to physicians, other health professionals and hospitals
- Maximize health care system resources
- Can reduce mortality by 20% - 30% amongst cardiac survivors
- Improve risk factors to ensure healthier Canadians at a younger age and throughout their lives
- Should be part of standardized training of medical and allied health personnel as an essential treatment plan for patients
- Must be accessible, timely and effective to impact lifestyle

The shape of things to come



UHR

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CHIP

**3505 Atwater Avenue
Montreal, QC H3H 1Y2
514-846-7973 ext 246
www.chiprehab.com**



Why Lifestyle Modification?



- Reduces mortality by 20% - 30% amongst cardiac survivors.
- Reduces risk of diabetes by up to 60% amongst obese and sedentary individuals
- Improves risk factors