# McGill Cardiovascular Health Improvement Program

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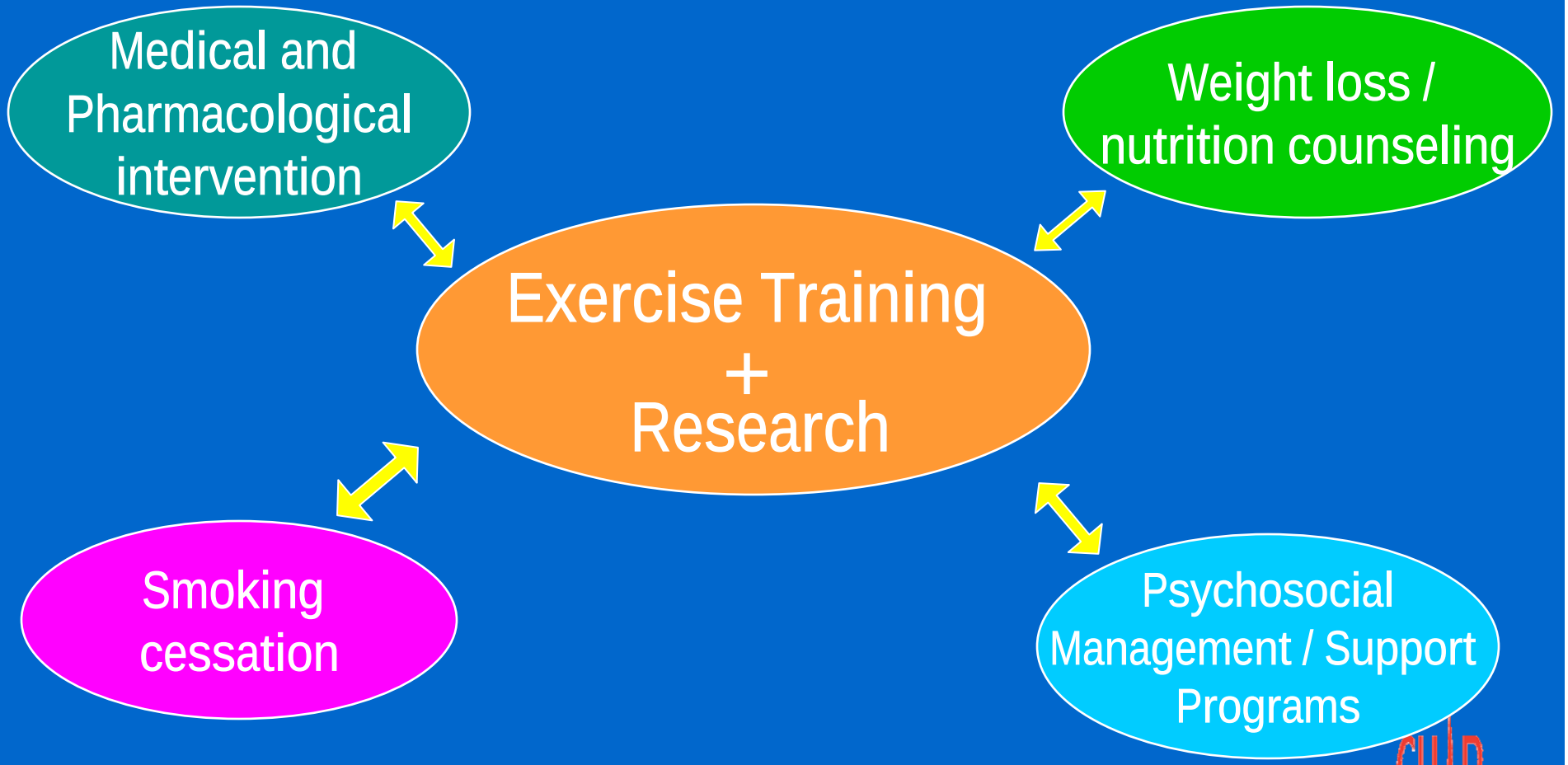
# Founded and staffed by physicians and scientists from the McGill University Teaching Hospitals in 1996.



# CHIP - A Multidisciplinary Team Approach



# 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.

McGill Cardiovascular Health Improvement Program

# Cardiovascular Disease Risk Profile

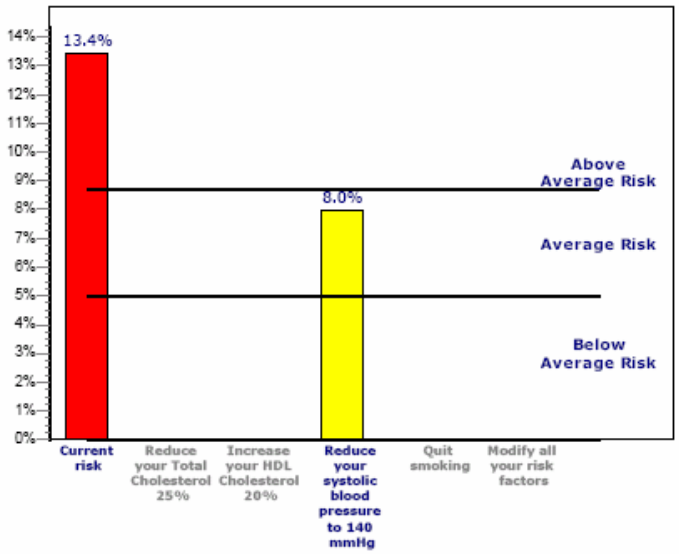
**Name:** Patient A
**Clinic:** CHIP - Montréal
**Consultation Date:** 5/3/2006

**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/m²) | 32.1 |
| Weight (lb) | 230 |
| Waist (inches) | .0 |

**Cardiovascular Age** 55.7

## 10-Year Risk of Cardiovascular Disease




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.*

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**Cardiovascular Disease Status Report**

Name: Patient A
Clinic: CHIP - Montréal
Consultation Date: 8/25/06

Age: 49 years
Gender: Male
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/m²) | 32.1 | 29.4 | Better |
| Weight (pounds) | 230.4 | 210.6 | Better |
| Waist Circumference (inches) | .0 | .0 | Unchanged |

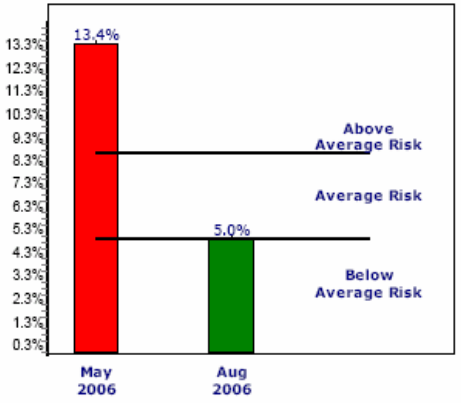
Your overall cardiovascular risk has been modified due to the following changes in your risk profile:

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)

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**Cardio-Metabolic Risk**
**Cardiovascular Disease - Status Report**

**(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/m²) | 26.8 | 26.4 | Better |
| Weight (pounds) | 187.0 | 184.6 | Better |
| Waist Circumference (inches) | 37.8 | 36.6 | Better |

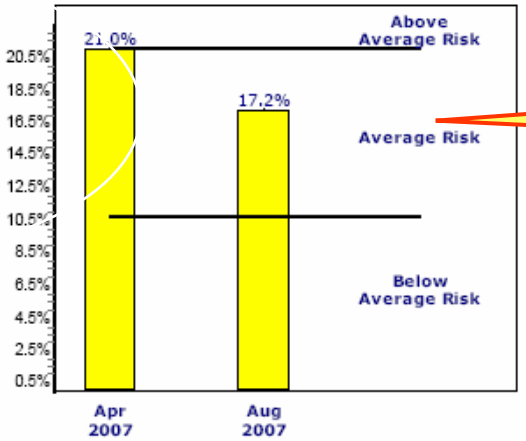
Your overall cardiovascular risk has been modified due to the following changes in your risk profile:

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

10-Year Risk of Cardiovascular Disease




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%.

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

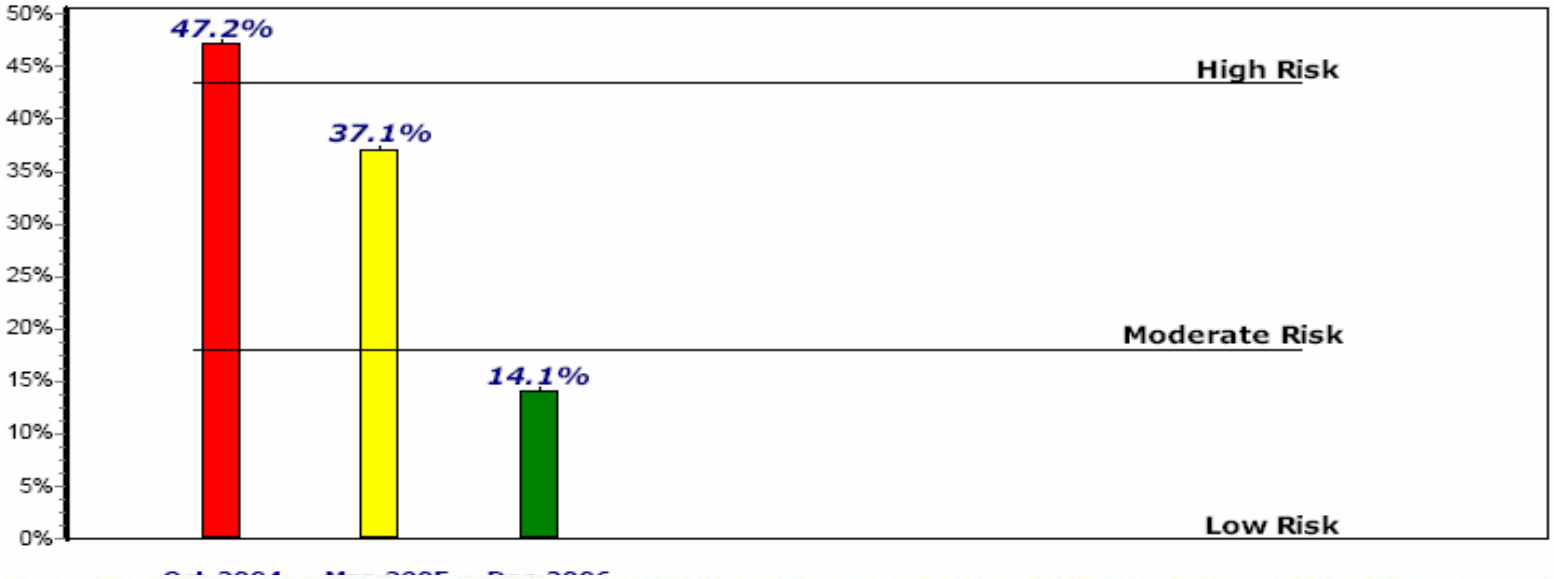
18% risk reduction

Risk factor changes

CV age improved by 1 year

| 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/m²) | 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%.

# 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

# 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)

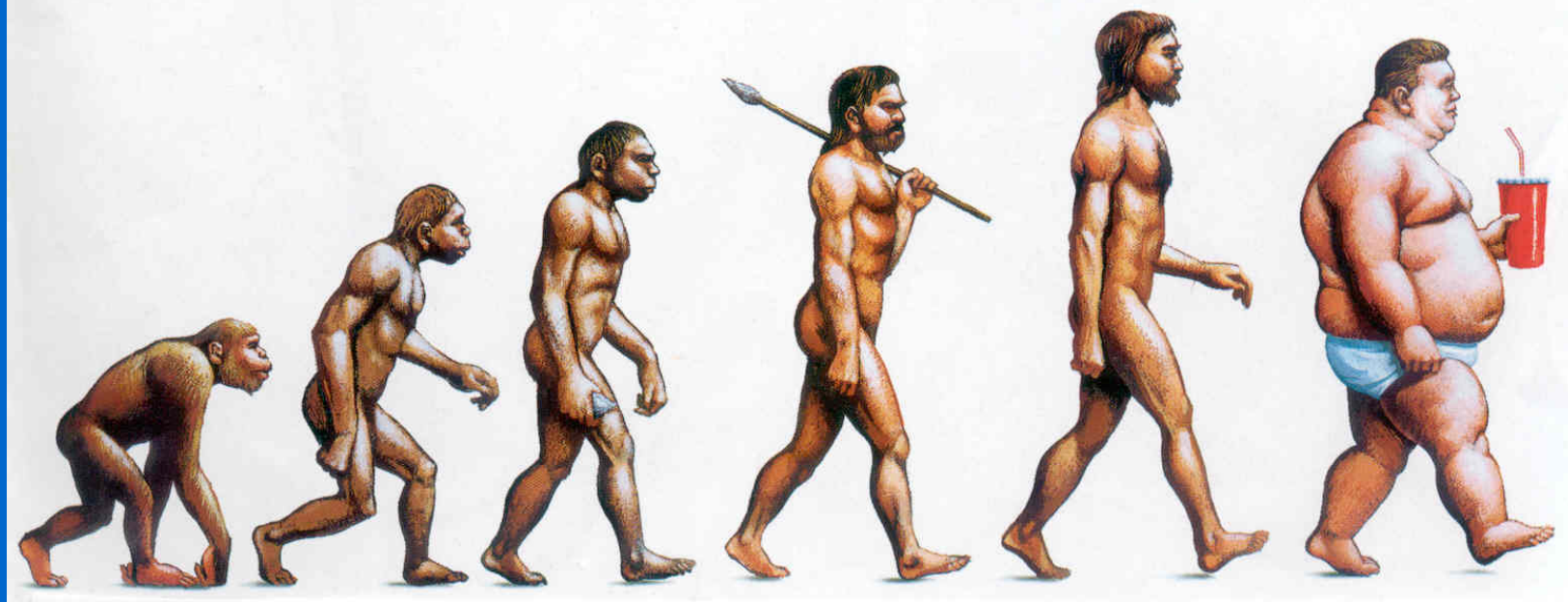
- No financial support
- Not part of usual and essential care = low referral
- Stronger message of importance by MD to patient
- Only 15% of eligible patients take advantage of programs
- Perception that “fee for programs” is private health care
- Physician shortages

# 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



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**