



CHANGE

Canadian Health Advanced by
Nutrition and Graded Exercise

A novel diet and exercise intervention to reverse metabolic syndrome

**Get Moving! Physical Activity for Better
Quality Care**

AFHTO Workshop March 7 2017

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R. Kin & Rupinder Dhaliwal RD, FDC



Metabolic Syndrome Canada The CHANGE Program

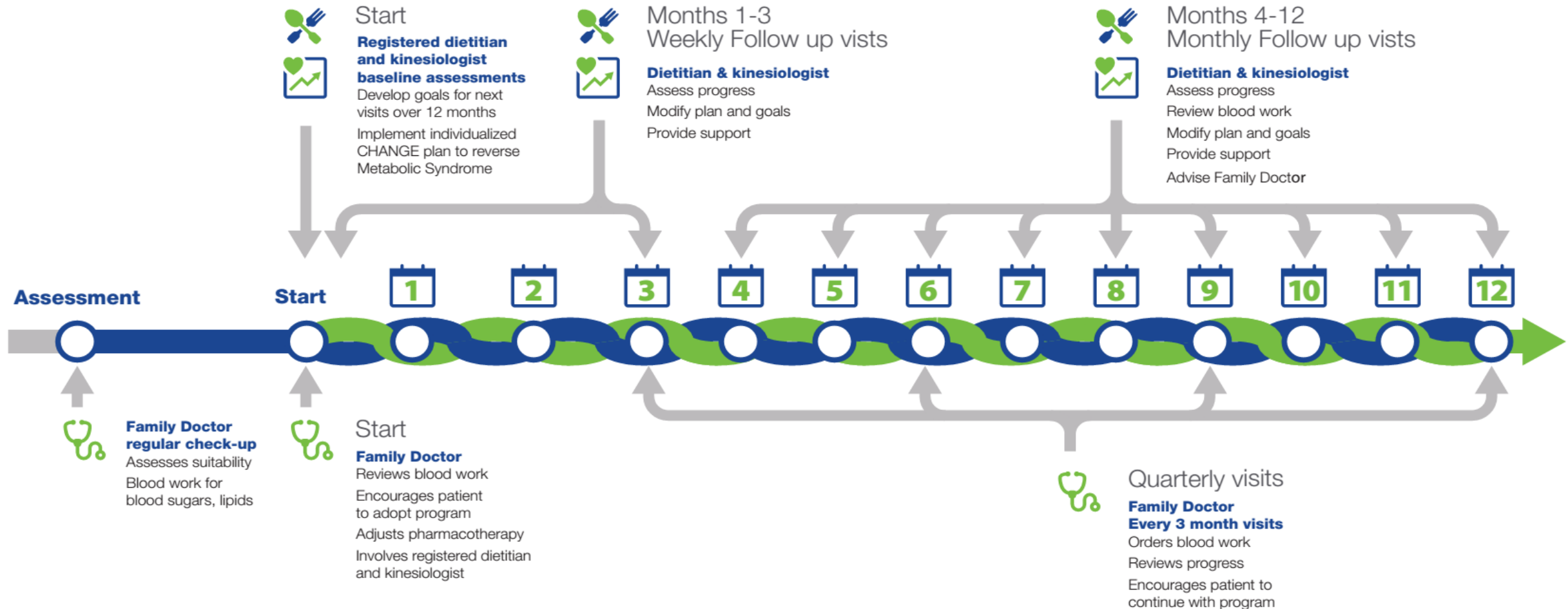


Unique lifestyle Intervention program created by leading health professionals at **Metabolic Syndrome Canada** www.metsc.ca to provide family health clinics with the tools they need to offer effective, lasting lifestyle intervention to patients with metabolic syndrome

Based on the **best evidence** from diet and exercise research, the CHANGE Program focuses on long-term changes and overall well-being



Program Overview



What is CHANGE so different?

5 Keys to Success

What makes the CHANGE Program more effective at reversing metabolic syndrome (MetS) than other diets or workout plans?

The difference can be summarized in five key ways:



Your Family Doctor



A team approach



**Personalized
diet-exercise plan**



Gradual intervention



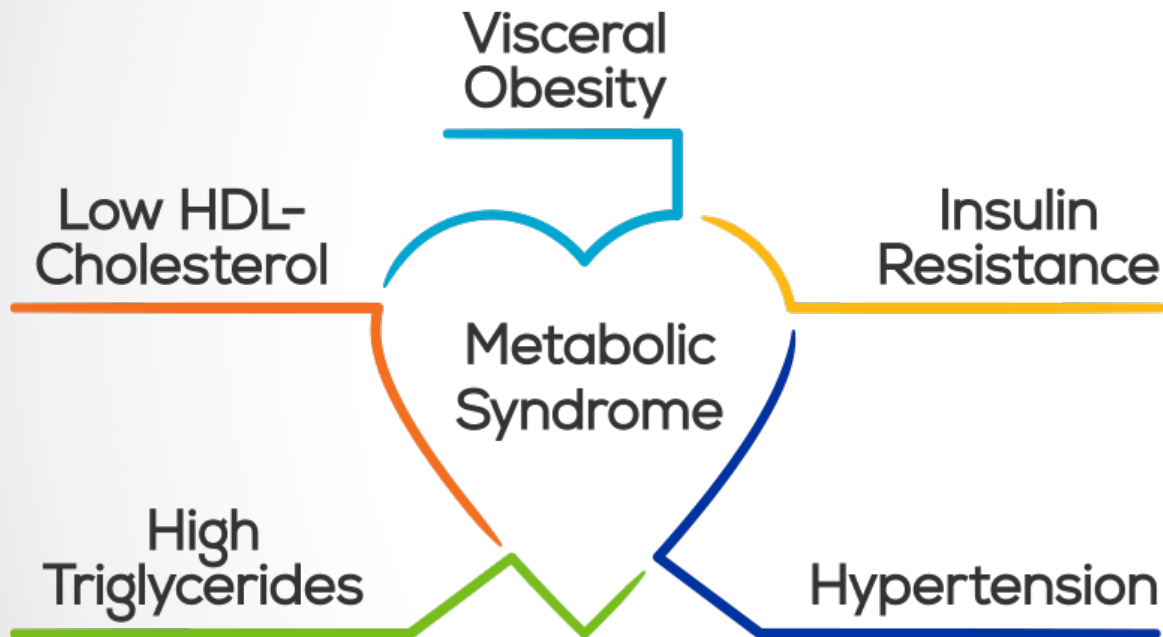
**Close follow-up
over 12 months**

The CHANGE Program

What is the impact on patients?

Clinicians and health team?

Patient outcomes: Reversal of Metabolic Syndrome



When 3 of these are present:

- High blood pressure ($\geq 130/85$ mm Hg, or receiving medication)
- High blood glucose levels (≥ 5.6 mmol/L, or receiving medication)
- High triglycerides (≥ 1.7 mmol/L, or receiving medication)
- Low HDL-Cholesterol (< 1.0 mmol/L in men or < 1.3 mmol/L in women)
- Large waist circumference (≥ 102 cm in men, ≥ 88 cm in women; ranges vary according to ethnicity)

Patient outcomes:

Metabolic Syndrome Reversal and Improvement

Improvements seen in

- Blood pressure (systolic and diastolic)
- Fasting blood sugars
- Blood lipids
- Waist circumference
- Risk of 10 year cardiovascular event
- Reduction in medication use
- Patient Experiences (see slide #26 for patient testimonial's and success stories)

Improvements seen despite lack/modest weight loss!

Feasibility Study (Jeejeebhoy et al CMAJ Open in press 2017)

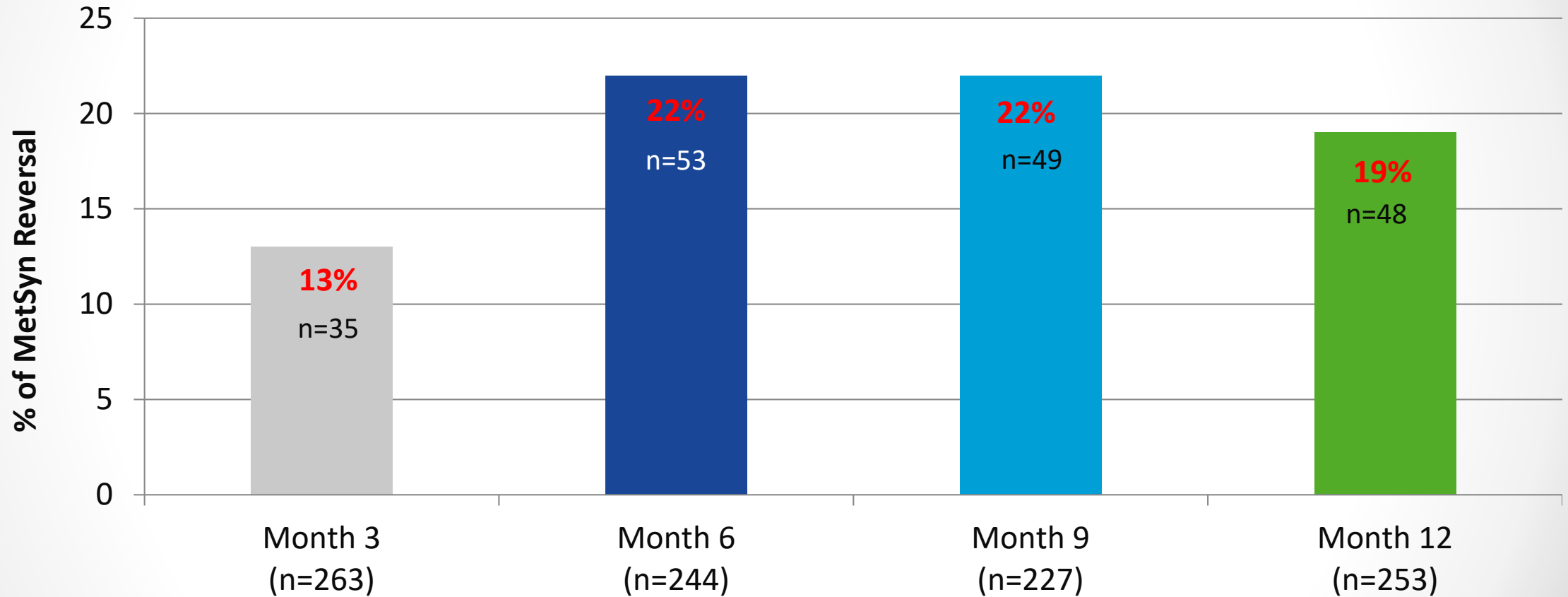
- December 2012-2014
- n =305 patients
- 3 Primary Care clinics across Canada
- Diet and exercise intervention over 1 year
- Data collection on MetS variables, diet and exercise
- Genetic analyses
- Training provided by MetSC Team
- Coordinated by Queens University



Médecin de famille – GMF-UMF- Laval

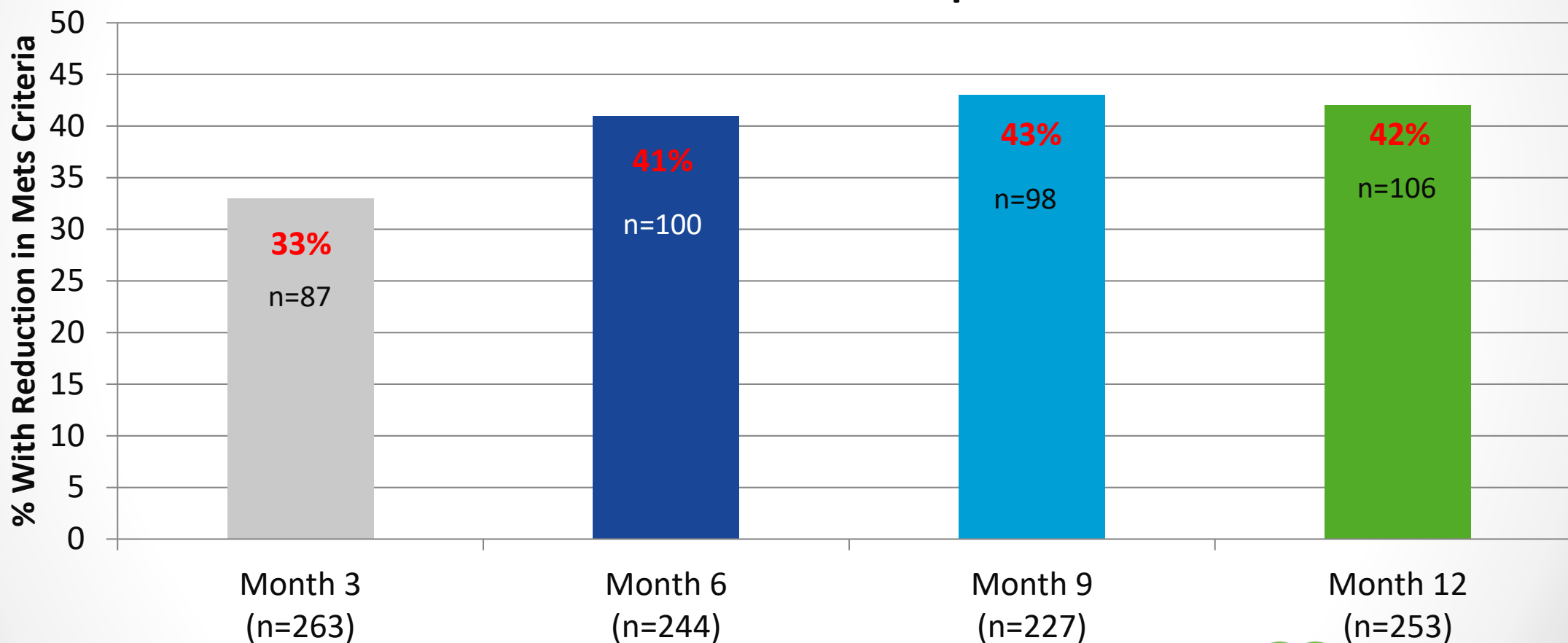
Feasibility Study Results

MetS Reversal (<3/5 criteria) compared to baseline



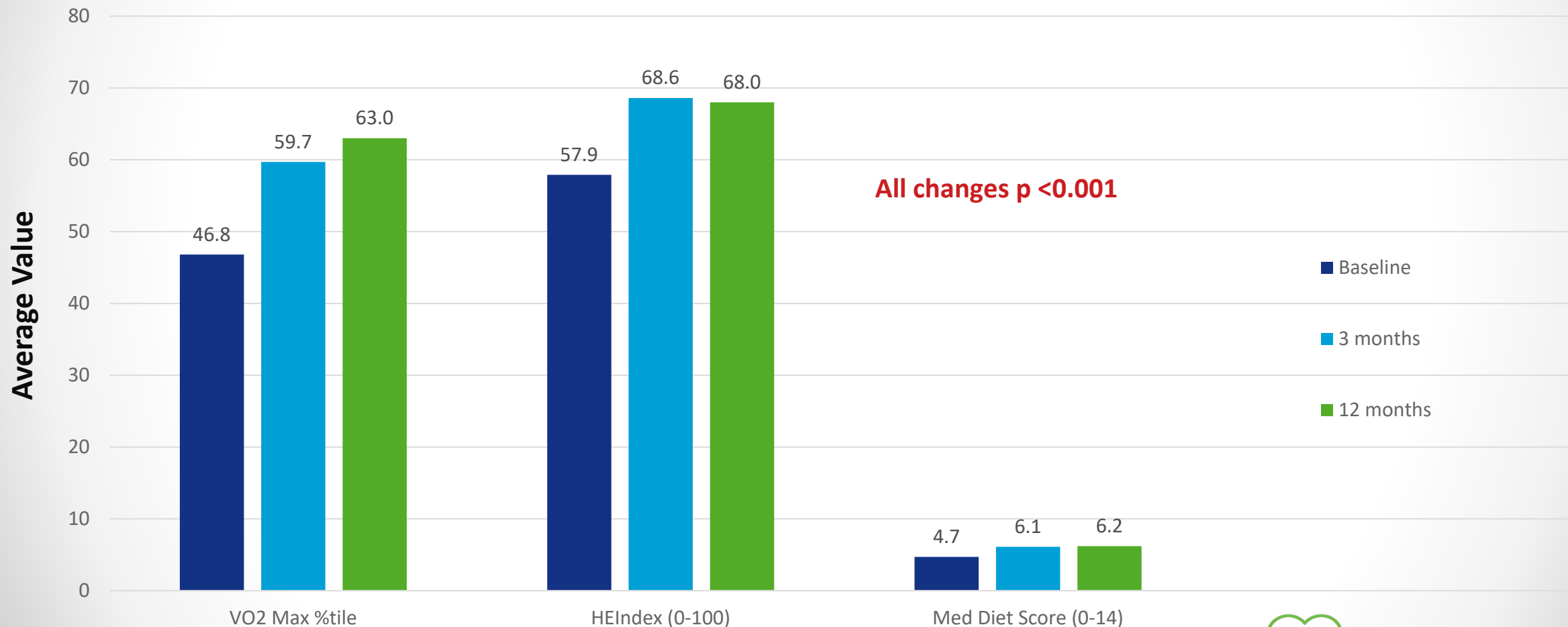
Feasibility Study Results

Patients with fewer MetS Criteria compared to Baseline



Feasibility Study Results

Changes in estimated VO2 max and diet



Health Team Outcomes:

Team approach

- More effective at behaviour change
 - “My wife and I tried 6 million (programs) and we thought well why not try another one...but this seemed more realistic.
- Multiple interactions with the patient
- Everyone was on the same page
- Using the right team member for the right work
- Less work for Family MD

**The CHANGE Program
the “carrot” in the initiative --
what questions/problems that
teams or patients have will this
initiative help with?**

CHANGE Program

Compared to other programs?

- ✓ Geared towards prevention of chronic disease management rather than reactive approach
- ✓ Addresses blood pressure, blood sugars, dyslipidemia, large waist size and medications together, not alone
- ✓ Weight loss is not a goal but instead improved health
- ✓ Family MD involvement is key
 - ✓ Main Pro accredited Family MD Workshop for CHANGE Program

Tailored intervention

- ✓ Designed for addressing insulin resistance, basic component of MetS

Exercise & Clinical Outcome Reporting

- ✓ Can be used for reporting to Ministry, program comparison, etc
- ✓ See Program Evaluation section

The CHANGE Program Implementation Considerations

CHANGE Program: Clinic resources needed

- FHT/CHC
 - interested in reducing risk of diabetes, cardiac disease, chronic diseases
- Family MD/delegate interested
 - Willing to follow patients q 3 months X 12 months
 - Could pilot in a sample of patients
- Access to Registered Dietitian
 - Weekly follow up visits Q week X 12 Monthly visits X 9
 - Group sessions where possible
 - Potential links to existing nutrition programs at the clinic
 - Exact time needed depends upon existing clinic programs

CHANGE Program: Clinic resources needed

Access to Exercise Specialist/Kinesiologist

- Weekly follow up visits Q week X 12 Monthly visits X 9
- Group sessions where possible
- Potential links to existing programs at clinics
- If no staffing at clinic, partnerships with gyms for supervised exercise and facility
- Exact time needed depends upon existing clinic programs

QIDSS/RNs/delegate

- Program Evaluation and outcomes

Team

- Willingness to engage in discussions around assisting MetSC expand the program beyond initial phase

CHANGE Program: MetSC to provide

- Ongoing training/support related to the program
- Program materials, handouts & toolkits
- Program Evaluation tools
- Link to other teams adopting program
- Building community of practice

CHANGE
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PARTICIPANT INFORMATION

You have been participate in T

The CHANGE program is a 1 y exercise program that is being

The program is aimed at adults

Metabolic Syndrome

Studies have shown that a diet whole grains and legumes can syndrome and can even reduce

Regular exercise that increase shown to prevent diabetes insulin in diabetic patients

1 Estruch et al NEJM 2013

What are the b

By the end of the 12-month p improvement in your health. blood sugars, blood fats and positive benefits such as imp There is also a chance that yo

The focus of the CHANGE Pr developing diseases and it m blood and waist size with or v

MetSC
METABOLIC SYNDROME CANADA

The CHANGE program is an initiative of Metabolic Syndrome Canada.

CHANGE
Canadian Health Advanced by
Nutrition and Graded Exercise

Metabolic syndrome
is a health crisis hiding in plain sight

1 in 5 Canadians has Metabolic Syndrome (MetS)

Metabolic Syndrome (MetS) is diagnosed when a patient has 3 of the following 5 conditions:

- Low HDL Cholesterol
- High Triglycerides
- High Blood Pressure
- High Blood Sugar
- Abdominal Obesity

CHANGE
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Your Personal CHANGE Passport

Use this passport to keep track of your CHANGE appointments, classes and sessions.

Family MD visit and Progress

Keeping track of the following will help you see your progress over time

FAMILY MD VISIT	DATE	WAIST	WEIGHT	BLOOD PRESS.	FASTING BLOOD SUGAR	TRIG.	HDL-C	LDL-C
BASELINE								
3 MONTHS								
6 MONTHS								
9 MONTHS								
12 MONTHS								

Notes

Your dietitian is:

NAME

CONTACT

Your exercise specialist is:

NAME

CONTACT

metabolicsyndromecanada.ca

MetSC
METABOLIC SYNDROME CANADA

Metabolic Syndrome Canada

The CHANGE Program

Talking to Patients

Baseline: Talking to Patients

Fitness Assessment (Aerobic and resistance training assessment)

- The initial fitness assessment is critical to begin developing rapport with the patient.
- Show “understanding” of their lifestyle, medical hx, and priorities.
 - What is important to them?
- Begin to create “urgency” for lifestyle change.
 - Why is the change important to them?

Weekly visits: Talking to Patients

1. Each patient is developed an “individualized” exercise program.
2. They actively assist in the development of the program.
3. Still use fitness principles but the program begins “their own”.
4. It is modified and changed regularly with their help.



Weekly visits: Talking to Patients

1. Reinforce the positives from their program.
 - What is working? What is not?
 - Why?
2. Re-emphasize their original goals.
3. Goal setting and % complete
 - Completed vs. Pass/Fail



Monthly follow up visits: Talking to patients

1. What is their progress from baseline to current?
 - Focus on the positives
 - Do not avoid the challenges:
 - Why and How?
 - Understanding and Urgency
2. Create new goals that challenge the individual
 - Patient centered and they actively choose their next goal
3. Focus on their intrinsic characteristics with their goal attainment vs. being a cheerleader



Talking to Patients – Keys to CHANGE

1. Encourage Accountability
2. Show Understanding
3. Create Urgency
4. Why and How?
5. Blend in education and exercise principles to maximize the outcomes of the exercise program



Patient Testimonials & Success stories

Patient testimonials

<https://www.metabolicsyndromecanada.ca/testimonials>

Success Stories

<https://www.metabolicsyndromecanada.ca/success-stories>

The CHANGE Program Measurement (Program Evaluation)

Program Evaluation

To help MetSC and the participating clinic evaluate the program, a minimal amount of data will need to be collected by the clinic

Needs to be:

- meaningful (evidence based) and
- manageable (easy to collect in primary care setting)

Data streamlined significantly from feasibility study of CHANGE program (Jeejeebhoy et al CMAJ Open 2017)

Program Evaluation: what outcomes?

Each clinic adopting the CHANGE program will report following outcomes to MetSC:

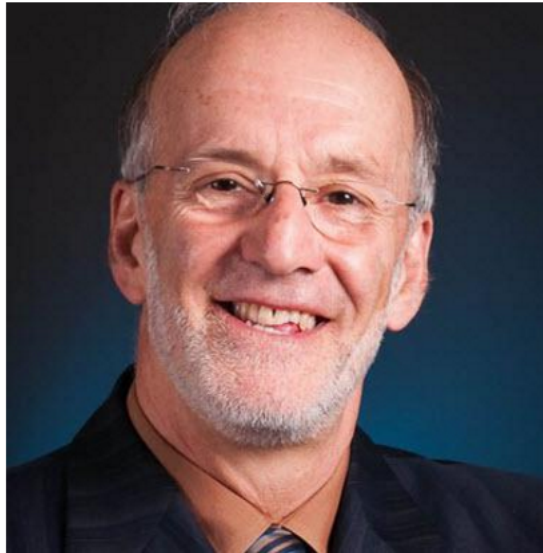
1. % attendance at the Family MD, Exercise Specialist and Dietitian visits
2. Reversal of MetS and it's components (includes medications)
3. Changes in predicted cardiovascular risk according to the PROCAM risk score (Assmann G et al Circulation. 2002 Jan 22;105(3):310)
4. Changes in physical activity & fitness levels
5. Changes in diet
6. Patient experiences

Plus engage in discussions of lessons learned and suggestions for modification

Physical Activity and Fitness Level: what minimum data?

Baseline, 3 and 12 months

- Waist circumference
- Aerobic Treadmill test
 - Speed (mph)
 - Estimated VO2 max
 - Aerobic Fitness Score
 - Health Benefit Zone
- Resistance Training Test
 - # push ups
 - Health Benefit Zone



Dr. Angelo Tremblay

Advisor

Kinesiology, Université Laval, Quebec City

CHANGE Physical Activity Guidelines
created in collaboration with
Dr. Angelo Tremblay

Physical Activity and Fitness Level: what minimum data?

Weekly visits (week 1-12) and Monthly visits (month 4-12)

- Attendance at visits
- Reason for missed visits
- Group vs. individual visit
- Contact time

The CHANGE Program

Program Evaluation tools

Physical Activity and Fitness Level: how to collect data?

MetSC to provide each participating clinic with the following:

- Worksheets/templates to collect the data
- Tools to help deliver exercise intervention and monitor patient's progress
- A Program Evaluation Tool (excel spreadsheet) that will help the clinic to create a report for MetSC

Wiling to work with clinic to integrate forms into EMR

Physical Activity and Fitness Level: Worksheets



Phase 2 Program Evaluation Worksheets and Instructions



Please direct questions to:
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Metabolic Syndrome Canada
Rupinder@metsc.ca
www.metsc.ca
t. 613 484 3830

Version December 8 2016

Exercise Specialist Visits

Enrollment #

Visit type	Date (YYYY-MM-DD) OR Missed Visit	Setting	Contact Time (Minutes)
<input type="checkbox"/> Baseline <input type="checkbox"/> Weekly (1-12) <input type="checkbox"/> Week # _____ <input type="checkbox"/> Monthly (4-12) <input type="checkbox"/> Month # _____	Date <u>YYYY-MM-DD</u> OR <input type="checkbox"/> Missed Visit Reason for missed visit _____	<input type="checkbox"/> Individual <input type="checkbox"/> Group	

Fitness Assessment

Enrollment #

Visit		Baseline	Month 3 (Week 12)	Month 12
Date YYYY-MM-DD		(must be same as Exercise specialist Visit Form)	(must be same as Exercise specialist Visit Form)	(must be same as Exercise specialist Visit Form)
Weight (kg)				
Waist Circumference (cm)				
Aerobic Treadmill Test	Speed (mph)			
	Steady-State Heart Rate (bpm)			
	VO ₂ max			
	Aerobic Fitness Score			
	Health Benefit Zone – (Aerobic) (Check one)	<input type="checkbox"/> Excellent <input type="checkbox"/> Very Good <input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Need Improvement	<input type="checkbox"/> Excellent <input type="checkbox"/> Very Good <input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Need Improvement	<input type="checkbox"/> Excellent <input type="checkbox"/> Very Good <input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Need Improvement
Resistance Training Test	Push-ups (number)			
	Health Benefit Zone – (Push-up) (Check one)	<input type="checkbox"/> Excellent <input type="checkbox"/> Very Good <input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Need Improvement	<input type="checkbox"/> Excellent <input type="checkbox"/> Very Good <input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Need Improvement	<input type="checkbox"/> Excellent <input type="checkbox"/> Very Good <input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Need Improvement



Must be completed for
program evaluation



Not needed for program evaluation

Only for Kinesiologist Assessment

Supervised Exercise Worksheet (optional)

Enrollment #

Visit Date	Type of Exercise	Target Duration	Target Intensity	Measured Duration	Measured Intensity	Perceived Intensity
Baseline Visit	Aerobic Exercise: <input type="checkbox"/> Treadmill <input type="checkbox"/> Elliptic <input type="checkbox"/> Step Machine <input type="checkbox"/> Bicycle <input type="checkbox"/> Rower <input type="checkbox"/> Other _____	Minutes	BPM	Minutes	BPM	Borg Scale
	Resistance Training: <input type="checkbox"/> Hand/Forearm/Arm <input type="checkbox"/> Lower Back/Abdominal <input type="checkbox"/> Neck/Shoulder/Upper <input type="checkbox"/> Leg/Thigh					Borg Scale
Week #1 visit	Aerobic Exercise: <input type="checkbox"/> Treadmill <input type="checkbox"/> Elliptic <input type="checkbox"/> Step Machine <input type="checkbox"/> Bicycle <input type="checkbox"/> Rower <input type="checkbox"/> Other _____	Minutes	BPM	Minutes	BPM	Borg Scale
	Resistance Training: <input type="checkbox"/> Hand/Forearm/Arm <input type="checkbox"/> Lower Back/Abdominal <input type="checkbox"/> Neck/Shoulder/Upper <input type="checkbox"/> Leg/Thigh					Borg Scale
Week #2 visit	Aerobic Exercise: <input type="checkbox"/> Treadmill <input type="checkbox"/> Elliptic <input type="checkbox"/> Step Machine <input type="checkbox"/> Bicycle <input type="checkbox"/> Rower <input type="checkbox"/> Other _____	Minutes	BPM	Minutes	BPM	Borg Scale
	Resistance Training: <input type="checkbox"/> Hand/Forearm/Arm <input type="checkbox"/> Lower Back/Abdominal <input type="checkbox"/> Neck/Shoulder/Upper <input type="checkbox"/> Leg/Thigh					Borg Scale

Not needed for program evaluation

Only for Kinesiologist Assessment to help monitor progress



MetSC
METABOLIC SYNDROME CANADA

Program Evaluation Tool for Progress Report

Name of Clinic

Type of Report

Q1 2016, Q2 2016, etc

Number of patients to be enrolled

50

Date started screening patients

YYYY-MM-DD

Date of first patient enrolled

YYYY-MM-DD

Instructions:

Colour Coding

Green sheets and cells accept data entry

Red sheets and cells are derived from data entry

Drop down options: must pick one option from list

Range checks can be overridden but please ensure value is correct when prompted

Enter data as it becomes available

Tab moves the cursor across to the next column

The enter key moves the cursor down to the next row

Overview

Attendance Summary

Outcome Summary

Patient characteristics

Family MD, Labs and Meds

Dietitian Contact

Tool will be provided to clinics adopting CHANGE. It will assist with the calculation of the following outcomes across all patients at the clinic that are in the program:

1. % attendance at visits
2. Visit setting and contact time
3. Waist circumference
4. Aerobic Treadmill test
 - Speed (mph)
 - VO2 max (estimated)
 - Aerobic Fitness Score
 - Health Benefit Zone
5. MetS reversal and components of MetS
6. Cardiovascular risk score
7. Mediterranean Diet Score

Links to references/resources

References

<https://www.metabolicsyndromecanada.ca/research>

Brochure on CHANGE and MetSC

<https://dash-chg.s3.amazonaws.com/MetSC%20Clinic%20Brochure.pdf>

MetSC team

<https://www.metabolicsyndromecanada.ca/team>

Questions

Contact

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