

# The Waypoint Metabolic Clinic for Outpatients



**ESTABLISHED IN 2009 TO ADDRESS THE GROWING CO-MORBID INCIDENCE OF METABOLIC SYNDROME IN CLIENTS OF WAYPOINT MENTAL HEALTH CENTRE SUFFERING FROM SERIOUS MENTAL ILLNESS**

# Metabolic Syndrome



Cluster of co-existent phenomena including

- \*Centripetal Obesity
- \*Hypertension
- \*Hyperglycemia
- \*Imbalance in Lipid Profile

Recognized to be a “herald” or “sentinel” for:

- \* Cardiovascular Disease including Strokes and Heart Attacks
- \* Type II Diabetes

If recognized early it is **REVERSIBLE**

# Canadian Working Definition



Metabolic Syndrome exists if 3 or more of the following criteria are met:

- **Abdominal Obesity = Waist Circumference**  
Men  $\geq$  102 cms  
Women  $\geq$  88 cms
- **HDL** Men  $<$  1.0 mmol/l  
Women  $<$  1.3 mmol/l
- **Triglycerides**  $\geq$  1.7 mmol/l
- **Blood Pressure**  $\geq$  130/85
- **Fasting Plasma Glucose**  $\geq$  5.7 mmol/l

# Metabolic Syndrome



**Definition in Canada is derived from :**

**Health Canada Canadian Guidelines for Body Weight Classification in Adults (2003)**

**Canadian Cardiovascular Society Position statement (2006)**

**Canadian Diabetes Association Clinical Practice Guidelines Expert Committee (2003)**

# World Health Organization



**WHO Estimates that there are now more than 1 billion members of the global population who are overweight, 300 million of whom are clinically obese. (2010)**

**WHO Global Strategy on Diet, Physical Activity and Health (2010) estimates that Obesity accounts for 2-7% of total healthcare costs in developed countries.**

**The document states “ The likelihood of developing Type II Diabetes and Hypertension rises steeply with increasing body fatness. Confined to older adults for most of the 20<sup>th</sup> century, this disease now affects obese children even before puberty. Approximately 85% of people with Diabetes are Type II, and of these, 90% are obese or overweight”**

# Global Ethical Aspect



- According to the “ No Nonsense Guide to World Food” published by the New Internationalist, written in 2008 by Wayne Roberts ( recipient of the Canadian Eco-Hero of the Year Award from Planet Focus in 2008) :
- 1 person in every 6 of the population of the world will die as a result of over-eating while 1 person in every 7 of the population of the world will die as a result of under-nourishment

# Metabolic Syndrome



## Reversal of Metabolic Syndrome

Greatly improves Quality of Life (ref)

Reduces the need for medications for:

Hyperglycemia

Hyperlipidemia

Hypertension (ref)

Reduces the burden on the Healthcare System

# Cost of Cardiovascular Disease in Ontario



- **Direct and Indirect costs of CVD in Ontario amount to \$5.5 billion per year ( 2% of the Provincial GDP)**
- **CVD in Ontario accounts for :**
- **20% of Acute Care Hospital Costs**
- **15% of Homecare Costs**
- **10% of Medical Services**
- **17% of Drug Expenditures**
- **CVD is the single leading cause of mortality in Ontario and has a strong impact on the middle-aged and elderly population**





**Source : “Burden of Cardiac Disease” , chapter One of  
“Cardiovascular Health and Services in Ontario”  
written in 1999 by Ben Chan and Wendy Young.**

# Diabetes in Ontario



- In Ontario 628,000 people have been diagnosed with Diabetes.
- It is estimated that 300,000 people do not know they are suffering from Diabetes
- 21% of people with Diabetes in Ontario have Eye Disease BEFORE being diagnosed
- 40% of people with Diabetes will develop debilitating complications such as blindness, kidney failure , heart disease and complications leading to amputations
- Cost of Diabetes to Healthcare System in Ontario is just under \$1 billion per year.

# Aboriginal Population



**In the Canadian Aboriginal population Type II Diabetes affects  
10% of the population aged 15 and over  
23% of the population over 65 years of age**

**In 1940 there was NO evidence of Diabetes among the Aboriginal peoples of Canada. Today rates in this population are 3 times the national average as a result of a diet high in fats and sugar, transition to a sedentary lifestyle and genetic vulnerability.**

**It is estimated that 27% of Aboriginal people in Ontario will have Type II Diabetes within 20 years**

**Sandy Lake Reserve in Northwestern Ontario has the third highest rate of Diabetes in the world at 26%**



- **Source: Report by Dr. Colin O. D’Cunha, Chief Medical Officer of Health for the Ministry of Health and Long-Term Care 2009**

# Metabolic Syndrome in Clients with Serious Mental Illness



It is estimated that 25-34% of the General Population in industrialized countries like Canada are suffering from Metabolic Syndrome (ref)

- Up to 60% of people suffering from mental illness , and in particular Schizophrenia are believed to be suffering from Metabolic Syndrome ( drug naïve) (ref)
- This estimate rises to 66% of people with mental illness if they are taking Psychotropic Medications (ref)

# Co-Morbid medical Illness in Clients with SMI



- People suffering from Serious Mental illness have higher rates of co-morbid medical illness than the general population and tend to die younger (ref)
- Factors which contribute to these phenomena include co-morbid addictions poverty poor diet limited access to fitness pursuits stigmatization and sub-optimal medical care (ref)
- Medications used to treat SMI commonly cause weight gain by bringing about an increase in appetite and by causing Insulin Resistance e.g. Second Generation Anti-psychotics (in particular Olanzapine and Clozapine) Mood-Stabilizing medications ( Valproic Acid and Lithium), Tricyclic Antidepressants, and some SSRIs ( notably Paroxetine)



- **Reference List available upon request**

# Metabolic Syndrome



## CLINICAL PRESENTATION

Clients with Metabolic Syndrome experience “brain fog” with lack of clarity of thought and lack of motivation

They also describe a profound lack of energy and a general sense of malaise

Complaints also include Insomnia, Depression, Anxiety, joint pains, and headaches

Clients often describe feeling moody, edgy and restless

Clients with Metabolic Syndrome often lack self-confidence and thus resist participating in recreational or vocational activities



# What is actually happening ?



The essential physiological factors which are at play in Metabolic Syndrome at a cellular level are :

## **INSULIN RESISTANCE**

The pancreas pumps out Insulin to accommodate the ingestion of Glucose until the cellular receptors become resistant (desensitized) to the effects of Insulin resulting in Hyperglycemia and elevated Triglycerides. Eventually the Pancreas can no longer keep up with the demand for Insulin and reduces production leading to Type II Diabetes.

## **Effect of CENTRIPETAL ADIPOCYTES**

Unlike other adipocytes Centripetal adipocytes act like little endocrine organs and release Inflammatory Cytokines...notably Adipocytokine

Other Inflammatory markers include MCP 1, TNF  $\alpha$ , IL 6, Leptin, and C Reactive Protein which all of which induce vascular endothelial dysfunction leading to Hypertension, Atherosclerosis, Insulin Resistance, and a low-grade inflammatory state



# Waist Circumference is the new Vital Sign !

Measurement of abdominal girth is the easiest, cheapest and most effective method of identifying and monitoring Metabolic Syndrome

Clients can be taught how to do waist measurement correctly which makes them an integral part of the solution and provides powerful motivation to change

[www.myhealthywaist.org](http://www.myhealthywaist.org)

# Factors contributing to Insulin Resistance and Centripetal Obesity



- **Genetic and Cultural Factors**
- **Age**
- **Weight**
- **Diet high in processed foods**
- **Sedentary Lifestyle**
- **Stress**
- **Lack of Sleep**
- **Smoking**
- **Alcohol Excess**
- **Psychotropic Medications**
- **Diagnosis of a Mental Illness**

# The Metabolic Clinic at OPSP



- **Initiated in 2009 by a group of staff at the OPSP who were very concerned about the dramatic increase in Metabolic Syndrome they were witnessing in their clients.**
- **Staff from other programs across Waypoint were approached and asked to collaborate in the development of a program to address the needs of our unique and vulnerable clientele. The team now includes staff from:**
  - **Out Patient Services Program**
  - **Rehabilitation Services**
  - **Spiritual Care**
  - **Addictions Services**
  - **Psychosocial Rehabilitation Program**
  - **Pharmacy**
  - **Dietary Services**
  - **Ontario Peer Development Initiative ( OPDI)**

# Our Approach



The main driving principles for the Metabolic Team in evolving this program have been

- (1) Consultation and collaboration with clients - Two Peer Support Workers are directly involved in the operation of the clinic and provide highly detailed feedback which informs the direction of the program at every level.

Liaison with the Ontario Peer Development Initiative ( OPDI ) is proving to be an invaluable collaboration with established mutual benefit

At the end of each module clients complete an Evaluation Sheet

At the end of each set of modules the clients are encouraged to provide us with verbal feedback at the closing session

- (2) Delivery of knowledge and information in a way that is readily applicable to the daily life of the client. The supposition is that if a client TRULY understands how the body works and what is happening to the body in Metabolic Syndrome he/she can make INFORMED choices regarding diet, activity, stress reduction, sleep hygiene, addictive pursuits, and coping with boredom/emptiness.

## Our Approach cont'd...



- Some of the risk factors for Metabolic Syndrome are NOT amenable to change but awareness can matter to the client e.g. family history, culture of origin.
- The importance of continuing to take Psychotropic medications which are bringing relief from mental suffering is emphasized.
- However many factors ARE amenable to change. Targeting these factors and lifestyle choices formed the basis for the didactic aspect of the program.

# Referral Process



Currently referrals are being accepted from any staff member within the Waypoint OPSP.

The existence of ANY of the criteria for Metabolic Syndrome is sufficient.

Clients on a Second Generation Antipsychotic Medication without any criteria for Metabolic Syndrome are also accepted ...notably EPI clients

# Referral Information



- The referring clinician completes a Referral Form detailing :
- Demographics
- Diagnoses
- Medications
- Height
- Weight
- Waist Circumference
- Blood Pressure
- Blood lipid levels
- Blood sugar levels
- Community Supports



# Individual Assessment and Therapy



Every client referred to the program has the opportunity to meet on an individual basis with :

- \* Psychiatrist/Physician who will assess motivation level, identify any special needs and introduce clients to the program
- \* Dietitian who will design a diet tailored to the needs, budget, and preferences of the individual
- \* Therapeutic Recreationist who will design an activation program tailored to the limitations, budget, and preferences of the individual
- \* Pharmacist who will advise on medications and on pain relief strategies
- \* Metabolic Nurse who will establish a supportive therapeutic relationship with the client and will monitor measurements throughout the program.

# Therapeutic Modules



- The client will be expected to attend 11 modules over 11 weeks each lasting 2 hours.
- The modules are intended to be partly didactic and partly supportive utilizing group therapeutic factors
- During a break in the module the peer support worker provides a nutritious snack for everyone utilizing the knowledge obtained from the program
- Each client sees the Metabolic Nurse to have measurements performed of waist circumference, weight and blood pressure.

# Therapeutic Modules



- 1 Understanding my Metabolism**
- 2 My Body and I**
- 3 & 4 Eating Well**
- 5 Meaningful Leisure leads to Healthy Lifestyle**
- 6 Recognizing and Reducing Stress**
- 7 Filling the Emptiness**
- 8 Sleeping Well**
- 9 Stages of Change / Mindfulness**
- 10 Understanding my Medications**
- 11 Walking Tall**

# Module One : Initiation to the Program



**Welcome Letter**

**Binder**

**Logbook**

**Pedometer**

**Tape measure**

**Introductions**

**Expectations**

**Confidentiality**

# Module One /Understanding my Metabolism



## Learning Objectives for the Client

**Understanding how food is processed in the body at a metabolic and biochemical level**

**Learning about Metabolic Syndrome and how it puts me at risk for future health problems**

**Learning about the risk factors for Metabolic Syndrome and applying that information to myself**

**Introduction to the changes I need to make in my lifestyle to reverse my metabolic risk factors**

# Module Two / My Body and I



## Learning Objectives for the Client

**Learning how the body organs all work together and how to make my body more efficient at converting food into energy**

**Respecting and caring for my body. Taking ownership of my health**

**How to access financial subsidies towards my metabolic health as appropriate to my financial situation**

# Module Three and Four/ Eating Well



## Learning Objectives for the Client

Reading and Understanding food labels

Eating well while spending less

Understanding the importance of eating regularly

Making healthy food choices while eating out

Understanding appropriate food choices within each food group

Mindful Eating

# Module Five/ Meaningful Leisure Leads to Healthy Lifestyle



## Learning Objectives for the Client

Understanding the benefits of being active

Understanding components of physical activity and fitness

Understanding how recreation and leisure can reduce barriers to wellness and motivate me to stay on track with my personal health goals

Introduction to local services and amenities

Help with subsidized Y membership, transportation etc.



# Module Six / Recognizing and Reducing Stress



## Learning Objectives for the Client

Learning about the biochemical and metabolic aspects of stress and the way stress contributes to Metabolic Syndrome

Recognizing the signs and symptoms of stress

Identifying the deleterious effects of chronic stress

Learning strategies for reducing stress in my life

# Module Seven/ Filling the Emptiness



- **Learning Objectives for the Client**
- **Addressing the issues of emotional and spiritual self-care which support wellness**
- **Exploring various coping strategies from emotional and spiritual perspectives**
- **Acquiring practical tools for self-care**

# Module Eight/ Sleeping Well



## Learning Objectives for the Client

Understanding the biochemical and metabolic aspects of sleep

Learning about the relationship between sleep and weight

Understanding the phases of sleep and how my body heals itself during sleep

Learning strategies for developing healthy sleep habits

Use of a personalized Sleep Ritual

# Stages of Change / Mindful Living



## Learning Objectives for client

**Identifying my readiness to change lifestyle by learning about the Stages of Change.**

**Learning how to apply Mindfulness Theory to my life and to my lifestyle choices**

# Module Ten/ Understanding my Medications



## Learning Objectives for the client

Understanding how medications are metabolized in the body

Learning about the way smoking can interfere with my medications

Learning ways to manage pain using medicinal and non-medicinal interventions

Understanding the benefits and risks involved with medications

# Module Eleven/ Walking Tall



## **Learning Objectives for the Client**

**Learning skills to build my self-confidence**

**Recognizing my own body shape and learning to dress accordingly on a budget**

**Becoming comfortable with my Body Image**

# Graduation Day !



- Opportunity for clients to refresh their memories and clarify issues taught at each of the modules
- Feedback from clients to clinic staff in oral and written format
- Opportunity for staff to encourage clients to attend the Staying Motivated Group and to maintain healthy lifestyle choices learned during the program
- Award Ceremony and party !
- Letter goes to Family Doctor / Nurse Practitioner regarding clients completion of the program
- Client is provided with a Requisition Form to repeat relevant bloodwork for which results are copied to Family Doctor / Nurse Practitioner

# AFTERCARE



- Clients are encouraged to continue psychological therapeutic work with case-manager / clinician
- Continue with individualized diet
- Continue with individualized activity program
- Option to attend “Staying Motivated” at OPSP twice per month



# Outcomes



Testimonials and Evaluations describe significant benefits to clients in terms of lifestyle change, awareness, self-confidence and mindfulness in daily decisions. Anecdotal feedback includes reports of weight loss of up to 75 lbs. Most anecdotal reports are of weight loss in the region of 4-18 lbs, and reduction in waist circumference of 1-4 inches.

Applying statistical measurement tools to data from our first 33 clients indicates statistically significant drop in waist , weight, and blood pressure measurements in participants.  
(data available upon request)

An application to the REB has resulted in approval for a formal research project to be undertaken effective immediately

# Knowledge Transfer



**The Program was honoured at the Health Achieve Expo 2010 by being awarded the Minister's award in the area of Client- Centred Innovation.**

**This enabled us to write a handbook entitled “ A Clinician's Guide to Understanding and Treating Metabolic Syndrome” ( available free of charge upon request)**



- **Other Knowledge Transfer Initiatives include:**
- **Half-day workshop for homeowners of the Homes for Special Care Program in our region**
- **Train the Trainers Program for health care providers on Christian Island serving an Aboriginal population**
- **Poster presentation at the Canadian Psychiatric Association meeting Vancouver 2010**

# Future Directions



- **Participation in a Task Force being established to address the needs of the Inpatients of Waypoint Centre for Mental Health**
- **Implementation of a “Special Needs” version of the program for clients functioning at a lower level as a result of intellectual impairment or intrusive illness phenomena**
- **Inclusion of a Physiotherapist to assist clients with activation in the presence of disability/pain**
- **One-to-One follow up by Metabolic Clinic Staff**
- **Cooking Module/Cooking Club**
- **Formal Research to document success ...approval received from REB**
- **Handbook for Clients**
- **Cookbook for Clients living with Metabolic Syndrome**
- **Newsletter by Peer Support Workers**



**Questions ?**



**Thank you for your kind  
attention !**