Improving cardiometabolic health in people with mental illness & in people with ID
AADDMM post conference workshop

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Keeping the Body in Mind YMH

www.iphys.org.au
Overview

- Defining the issues
- *Keeping the Body in Mind* Programme
- The international landscape-iphYs & HeAL
The scandal of premature mortality

People experiencing SMI have:

- Life expectancy gap
- Higher rates of:
  - tobacco use
  - obesity
  - hypertension
  - glucose & lipid dysregulation
  - diabetes
  - metabolic syndrome
  - sedentary lifestyle & poor nutrition
- Under-recognition & under-treatment of cardiometabolic risk factors
What do we know? First Episode Psychosis (FEP)

- These changes occur early, are common
  (Verma et al, 2009; Foley et al, 2011; Correll et al 2014)

- Up to 86% experiencing clinically significant weight-gain within 12 months after AP initiation

- Tobacco rates at FEP onset 59%  (Myles et al 2012)

- Children & adolescents are at risk
  (Correll et al 2009, Eapen et al, 2013)
Cardiovascular Risk factors

Hippocrates:
“Healing is a matter of time, but it is sometimes also a matter of opportunity.”

Overview - people with ID

While cardiovascular events are the leading cause of death amongst both the general population and people with ID (Patja, Mölsä et al. 2001), certain risk factors for cardiometabolic morbidity and mortality remain more prominent in people with ID.

Cardiometabolic risk factors that people with ID may be particularly vulnerable to include:

- Higher rates of psychotropic prescription
- Higher levels of physical inactivity & obesity
- Increased barriers to accessing quality healthcare
- Certain genetic syndromes
- Increased chance of socioeconomic disadvantage & stigma
Psychotropic medications and cardiometabolic risk

Cardiometabolic ill effects linked to psychotropics include increased risk of central obesity, raised blood pressure, and lipid and glucose dysregulation (Barnes, Paton et al. 2008).

People with ID are more likely to be exposed to these risks due to:

- Higher rates of mental illness than the general population (Cooper, Smiley et al. 2007)
- Overuse of psychotropics to treat challenging behaviour (Deb, Unwin et al. 2009)
- Commencement of psychotropics at a younger age (Matson and Mahan. 2010)
- Psychotropic polypharmacy (Deb, Unwin et al. 2014)
- Inadequate monitoring of psychotropic side effects (McGillivray & McCabe 2004)
Obesity and cardiometabolic risk

Abdominal obesity has been associated with a three to ten-fold risk of hypertension, hypertriglyceridemia, hyperinsulinemia, and low high-density lipoprotein cholesterol (Draheim, Williams et al. 2002).

Compared to the general population, people with ID are more likely to be overweight or obese (Reinehr, Dobe et al. 2010; Hamilton, Hankey et al. 2007)

Reasons for this finding include:

- Lower rates of physical activity (Wallace and Schluter 2008)
- More people with ID may lack awareness of the health impacts of obesity and therefore may be less motivated towards weight loss/healthy eating (Reinehr, Dobe et al. 2010)
- Social isolation may trigger excessive eating as a compensatory mechanism (Reinehr, Dobe et al. 2010)
- Genetic syndromes linked to ID may impact appetite, fat distribution and/or propensity to wards excessive weight gain (Wallace and Schluter 2004)
Physical inactivity and cardiometabolic risk

Physical inactivity is strongly associated with the cascading chain of cardiometabolic risks such as obesity, hypertension and glucose dysregulation \cite{Dixon-Ibarra2013} and has also been identified in recent research as an independent variable for cardiometabolic morbidity in its own right \cite{Katzmarzyk2005}.

Children, youth, adults and older adults with ID are all less physically active than their typically developing peers \cite{Einarsson2014, Temple2003, Dixon-Ibarra2013}.

Reasons for this finding include:

- Higher rates of physical, sensory or cognitive mobility impairments \cite{Murphy2008}
- Inadequate financial resources to purchase specialised sporting equipment and lack of appropriate and accessible pre-existing facilities \cite{Murphy2008}
- Lack of confidence of sporting and other exercise related professionals in tailoring exercise programs to meet the specific needs of people with ID \cite{Reinehr2010}
Genetic syndromes and cardiometabolic risk

Genetic syndromes and other physical markers associated with some forms of intellectual disability (i.e. low birthweight, increased infection risk) elevate baseline cardiometabolic risk (Wallace and Schluter 2008)

Genetic syndromes effecting cardiometabolic profile include:

<table>
<thead>
<tr>
<th>Syndrome</th>
<th>Diabetes mellitus</th>
<th>Hypertension</th>
<th>Obesity</th>
<th>hyperlipidaemia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angelman</td>
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<tr>
<td>Downs</td>
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<td>Prader-Willi</td>
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<td>Sotos</td>
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<td>Tuberous sclerosis</td>
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<td>Turners</td>
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<td>Williams</td>
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<td>Cohen</td>
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<td>Bardet-Biedl</td>
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</table>
Healthcare barriers and cardiometabolic risk

Lack of access to quality and preventative healthcare decreases opportunities for early intervention and increases risk of cardiometabolic complications.

Barriers to quality healthcare encountered by people with ID include:

- Difficulty identifying and/or communicating healthcare needs (Lott, McGregor et al. 2004)
- Lack of appropriate and affordable healthcare options
- Clinician lack of confidence in treating people with ID (Lennox 2000)
- Diagnostic overshadowing (Reis and Szyszko 1983)
- Time restraints in the clinical encounter
- Anxiety or avoidance of procedures such as blood tests (Barr, Gilgung et al. 1999).
Stigma and cardiometabolic risk

Stigma and social exclusion are linked to a number of negative health outcomes including cardiometabolic risk such as elevated blood pressure (Sims, Diez-Roux et al. 2012; Krieger 1990)

People with ID face higher rates of stigmatisation than the general population including:

• A lack of fulfilling employment options
• Inadequate access to quality healthcare
• Limited educational opportunities
• Weak representation at a policy level
• Ongoing segregation of certain services
• Lack of strong social networks (Wallace and Schluter 2008)
What do we know? Rx

- **Lifestyle interventions in SMI effective**
  (Daumit et al 2013; Green et al 2015, Bartels et al 2015)

- **Lifestyle interventions in FEP are effective**
  (Alvarez-Jimenez, 2006; 2010; Abdel-Baki et al, 2013; Curtis et al, 2015, EiP)

- **Metformin attenuates antipsychotic-induced weight gain**
  (Newall et al, 2012; Curtis et al, 2012)
Clinically Significant weight loss is possible in SMI

- **STRIDE** 47% AT 12/12 (Green et al, 2015, AJP)

- **ACHIEVE** 37.8% (Daumit et al, 2013, NEJM)

- **IN SHAPE** 49% (Bartels et al 2013, Psych Services)

- **IN SHAPE** 51% (12/12) & 46% (18/12) (Replication-Bartels 2015, AJP)

The greatest current barrier to increasing the life expectancy of persons with serious mental illness is no longer a knowledge gap—it is an implementation gap.
Why not Intervene Early

For the Mind AND Body?
Screening & Monitoring

Don’t just screen, Intervene!


Specific Pharmacological Interventions:

Consider metformin if:
- impaired glucose
- PCOS
- obesity or rapid weight gain

Metformin therapy: start at 500mg x ½ tablet before breakfast and dinner for two weeks then increase to 500mg bd. Dose can be increased to a maximum of 3 grams daily, though as this is off label treatment, no adverse effects should be tolerated. If side-effects of nausea, abdominal cramping, shift to after meal.

Lipid lowering therapy: (use PBS guidelines)

Statin initiation doses for cholesterol lowering:
simvastatin 10 mg nocte
atorvastatin 10mg nocte
pravastatin 10mg nocte
rosuvastatin 10 mg nocte

Fibrate therapy for triglyceride lowering:
gemfibrozil 600 mg bd
fenofibrate 145 mg mane

Anti hypertensive therapy: Multiple agents are available. Liaise with the GP who can monitor.

Vitamin D:
- <50 nmol/L: replenish stores: cholecalciferol 4,000 IU per day for one month;
- maintenance: 1,000 IU daily. Target >80nmol/L.

Screen cardiometabolic risk factors using screening tool (eg Waterreus, et al 2009, Curtis et al 2009 SESLHD); examine and investigate 3 monthly on all clients on psychotropic medications.

NB: additional considerations for those on mood stabilizers & clozapine not included here and need to be performed (eg medication plasma levels, TFT’s UEC’s, ECHO, etc)

Always involve general practitioner, and, where appropriate and possible refer to specialist (eg dietitian/ physician/ diabetic clinic/ exercise physiologist).

NB: Some drugs used in metabolic disease treatment are contraindicated in pregnancy (eg some antihypertensives and lipid lowering drugs). If your patient on any metabolic medications is considering pregnancy, please discuss with their GP.
<table>
<thead>
<tr>
<th>Antipsychotic drug</th>
<th>Likelihood of weight gain</th>
<th>Likelihood of treatment-related glucose metabolism abnormalities*</th>
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</thead>
<tbody>
<tr>
<td><strong>First-generation antipsychotics</strong></td>
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<tr>
<td>Chlorpromazine</td>
<td>High</td>
<td>Higher‡</td>
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<tr>
<td>Fluphenazine</td>
<td>Low</td>
<td>Lower‡</td>
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<tr>
<td>Haloperidol</td>
<td>Intermediate</td>
<td>Lower</td>
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<tr>
<td>Molindone</td>
<td>Low</td>
<td>Lower‡</td>
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<tr>
<td>Perphenazine</td>
<td>Low</td>
<td>Lower</td>
</tr>
<tr>
<td>Pimozide</td>
<td>Low</td>
<td>Lower‡</td>
</tr>
<tr>
<td>Thioridazine</td>
<td>Intermediate</td>
<td>Higher‡</td>
</tr>
<tr>
<td><strong>Second-generation antipsychotics</strong></td>
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<tr>
<td>Amisulpride</td>
<td>Low</td>
<td>Lower</td>
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<tr>
<td>Aripiprazole</td>
<td>Low</td>
<td>Lower</td>
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<tr>
<td>Asenapine</td>
<td>Low</td>
<td>Lower‡</td>
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<tr>
<td>Clozapine</td>
<td>High</td>
<td>Higher</td>
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<tr>
<td>Iloperidone</td>
<td>Intermediate</td>
<td>Intermediate‡</td>
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<tr>
<td>Lurasidone</td>
<td>Low</td>
<td>Lower‡</td>
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<tr>
<td>Olanzapine</td>
<td>High</td>
<td>Higher</td>
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<tr>
<td>Paliperidone</td>
<td>Low</td>
<td>Intermediate</td>
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<tr>
<td>Quetiapine</td>
<td>Intermediate</td>
<td>Intermediate</td>
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<tr>
<td>Risperidone</td>
<td>Intermediate</td>
<td>Intermediate</td>
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<tr>
<td>Sertindole</td>
<td>Intermediate</td>
<td>Lower</td>
</tr>
<tr>
<td>Ziprasidone</td>
<td>Low</td>
<td>Lower</td>
</tr>
<tr>
<td>Zotepine</td>
<td>Intermediate</td>
<td>Not reported</td>
</tr>
</tbody>
</table>

*Relative to other antipsychotics. ‡Data on these associations are limited. Permission obtained from Nature Publishing Group © De Hert, M. et al. Nat. Rev. Endocrinol. 8, 114–126 (2012).
Prescribing in FEP-Practice Guidelines

🌟 Low dose AP treatment

🌟 Minimise SE’s especially metabolic ones

🌟 Olanzapine now a second line AP Rx
(EPPIC Medical Management in EP, 2014; PORT Guidelines)

🌟 Lifestyle intervention at time of AP initiation
Overview

- Defining the issues
- *Keeping the Body in Mind* Programme
- The international landscape-iphYs & HeAL
Keeping the Body in Mind

A structured 12-week intervention program for positive cardiometabolic health in youth with first-episode psychosis

Jackie Curtis\textsuperscript{1,2}, Andrew Watkins\textsuperscript{1}, Simon Rosenbaum\textsuperscript{1}, Scott Teasdale\textsuperscript{1}, Megan Kalucy\textsuperscript{1,2}, Katherine Samaras\textsuperscript{3,4}, Philip B. Ward\textsuperscript{2,5}

\textsuperscript{1}Bondi Early Psychosis Programme, SESLHD; \textsuperscript{2}School of Psychiatry, UNSW; \textsuperscript{3}Department of Endocrinology, St Vincent’s Hospital, and \textsuperscript{4}Diabetes and Obesity Program, Garvan Institute, Sydney; \textsuperscript{5}Schizophrenia Research Unit, SWSLHD;
KBIM Project

- Clients aged 15-25 yrs
- <4/52 of commencing meds
- 12 week lifestyle intervention
- Funded by the NSW Mental Health Drug & Alcohol Office

Early Intervention in the Real World
Evaluating an individualized lifestyle and life skills intervention to prevent antipsychotic-induced weight gain in first-episode psychosis

Jackie Curtis,1,2 Andrew Watkins,1,3 Simon Rosenbaum,1,2,4 Scott Teasdale,1,2 Megan Kalucy,1,2 Katherine Samaras5,6 and Philip B. Ward2,7
Percentage (%) of participants experiencing clinically significant (>7%) weight gain at 12 weeks follow-up
Overview

- Defining the issues
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Keeping the Body in Mind

Working Group
HeAL core working group

- David Shiers & Jackie Curtis  
  (co-chairs)
- Mario Alvarez Jimenez
- Debra Foley
- Helen Lester
- Eoin Killackey
- Katherine Samaras
- Philip Ward
- Stephanie Webster

Expert international advisory panel

- Jonathan Campion
- Christoph Correll
- Marc De Hert
- Richard Holt
- Alex Mitchell
- Davy Vancampfort
Within the next 5 years:

- 90% users understand their risks for future obesity, diabetes and CVD
- 75% gain <7% of pre-illness weight two years after initiating antipsychotic Rx
- 75% maintain blood glucose, lipid profile and BP within normal range two years after initiating antipsychotic
- 90% health promotion advice <30% smoke tobacco
- >50% age-approp. physical activity

Where medicines are used to treat psychosis, these are regularly reviewed according to recommended prescribing standards that minimise risks for obesity, CVD and diabetes.
Healthy Active Lives (HeAL)

Keeping the Body in Mind in Youth with Psychosis

Imagine a world where...

- Young people experiencing psychosis have the same life expectancy and expectations of life as their peers who have not experienced psychosis.
- Young people experiencing psychosis, their family and supporters know how to, and are consistently supported to, maintain physical health and minimize risks associated with their treatment.
- Concerns expressed by young people experiencing psychosis, their family, and supporters, about the adverse effects from the medicines used to treat psychosis are respected and inform treatment decisions.
- Health care professionals and their organisations work cohesively in a united effort to protect and maintain the physical health of young people experiencing psychosis.
- Healthy active lives are promoted proactively from the start of treatment, focusing on healthy nutrition and diet, physical and purposeful activity, and reduced tobacco use.
HeAL

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International consensus
International support
- Algorithm NSW, Australia 2011
- UK Lester Adaptation 2012
- Ontario cardiometabolic risk tool 2014
- UK Lester Adaptation update 2014
- NICE guidelines 2013 (CG155) & 2014 (CG178)
- Investment 2014 NSW
- International translations of HeAL
- Lester User postcard 2014
- NSW Adolescent algorithm 2014
- Japanese Algorithm 2014
- Norwegian Algorithm 2015
Regular physical health check-ups matter
Ask for support from your GP or mental health team

The LESTER RESOURCE has been developed for doctors and nurses in both your GP surgery and your mental health team.

It offers guidance on physical health monitoring to help people with severe mental illness avoid conditions like diabetes, heart disease and stroke.

Your doctor or nurse can download the LESTER RESOURCE here:
www.rcpsych.ac.uk/quality/NAS/resources or www.nice.org.uk/guidance/cg178/resources

The Service User Reference Group for the National Audit of Schizophrenia developed this card as a way of empowering service users to improve the quality of care they receive.
Implementing the HeAL Targets
Living Well: A Strategic Plan for Mental Health in NSW 2014-2024

**Actions**

6.2.1 Implement the HeAL declaration in NSW Local Health Districts to ensure physical health needs are prioritised from the first episode of psychosis.

6.2.2 Ensure all access points for people experiencing severe mental illness assume responsibility for facilitating physical health assessments and monitoring of physical health status.

6.2.3 Ensure that locally based mental health and wellbeing promotion activities developed under *Building community resilience and wellbeing*, p. 25, promote healthy and active lifestyles.

6.2.4 Ensure that the local co-ordination structures established under *Strengthening local action*, p. 17, include partnerships with local government and facilities such as gyms and swimming centres to facilitate referral and access to such facilities by people who experience mental illness.

6.2.5 Build connections with and learn from work in chronic disease prevention already under way in NSW and Australia.

6.2.6 Ensure that population health activities appropriately target people with a lived experience of mental illness, including interventions to address smoking, physical activity, nutrition and use of alcohol and other drugs.

6.2.7 Encourage and support GPs in a holistic approach to treat people with both mental and physical illness, including improved collaboration across general practice and specialist mental health and acute services. These mechanisms will need to consider issues such as appropriate access...
Your Experience of Service

Based on HeAL (Healthy Active Lives)

In the last 3 months has the service advised you about the following:

- Healthy eating and diet
- Smoking
- Alcohol and drug use
- Sexual health
- Exercise and physical activity
- Possible physical side effects of some medications (such as weight gain, diabetes or heart disease)
In Summary….  

Given the potentially modifiable nature of many of these risk factors, thoughtful and tailored interventions in each area would be expected to dramatically improve cardiometabolic outcomes in this population.

Clinicians should:
•  Proactively monitor each of these risk areas
•  Provide evidence based interventions as necessary

Adequate funding and policy leadership will be required to ensure timely and appropriate interventions can be implemented
THANK YOU

The Young People & Staff, The Bondi Early Psychosis Programme, SESLHD, Liverpool MHS, SWSLHD

Philip Ward  Katherine Samaras  David Shiers  Simon Rosenbaum  Joel Pilgrim  Scott Teasdale  Mona Asghari-Fard  Stephanie Webster  Andrew Watkins  Alana Scully  Chez Davenport  Oscar Lederman  Hannah Newall

Julio De La Torre  Janelle Abbott  Shuli Futeran  Catherine Henry  Ann Howard  Natalie Bradbury  Karen Chown  Murray Haar  Li Xian Lim  Jess Winters  Megan Kalucy  Stacey Harris  Kate Stewart

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