Managing Pediatric Eating Disorders

Collaboration between BC Children's Specialized Provincial Eating Disorder Program & West Kootenays

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BC MENTAL HEALTH & SUBSTANCE USE SERVICES
An agency of the Provincial Health Services Authority

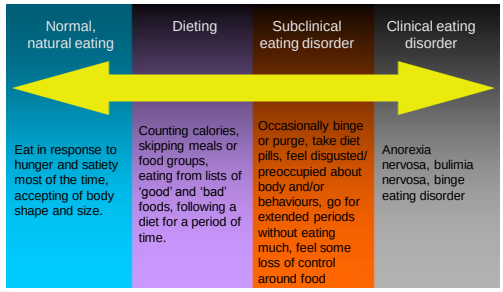
Education Schedule: March 6th, 2015

TIME	Speaker
08:00 – 09:00	Breakfast, registration
09:00 – 09:15	Team intro and Riley
09:15 – 10:15	Philosophy Communication as Team Team Roles
10:15 – 10:30	BREAK
10:15 – 12:15	ASSESSMENT, MANAGEMENT & FOLLOW-UP
12-00 – 13:00	LUNCH
13:00 – 15:00	COLLABORATIVE THERAPEUTIC INTERVENTIONS
15:00 – 15:15	15 Min BREAK
15:15 – 16:15	Breakout to: 2 local Case studies for MEDICAL and Q & A COLLABORATIVE THERAPEUTIC
16:15 – 16:30	WRAP UP & CONSOLIDATION

Outline – Morning session

- Introductions
- Shared Philosophy of care
- Team roles
- Break

Spectrum of Eating Disorders



Statistics

- Major causes of mortality in eating disorders in adolescents are:
  - Suicide (the highest cause of death)
  - Cardiac arrhythmia and circulatory failure
  - Complications of substance abuse
- Almost all would be preventable with early diagnosis and treatment

Trends in BMI weight categories in BC

	2003	2008	2013
Males			
Underweight	2%	2%	4%
Healthy weight	72%	73%	70%
Overweight	19%	18%	18%
Obese	7%	7%	8%
Females			
Underweight	2%	2%	3%
Healthy weight	84%	84%	81%
Overweight	11%	11%	12%
Obese	3%	3%	4%

2013 BC Adolescent Health Survey

Eating Behaviors

- 52% of healthy weight females were trying to lose weight (46% in 2008)
- 5% males and 10% of females vomited on purpose after eating.
- One third of healthy weight males were trying to gain weight
- 13% of healthy weight males were trying to lose weight (15% in 2008)

2013 BC Adolescent Health Survey

Early Childhood Restrictive ED

Canadian Pediatric Surveillance Unit:

- 5 to 12 years: 2.6 cases per 100 000 person years
- Incidence 2-4 **>** Type 2 Diabetes in children and youth up to the age of 18 years
- Highest incidence age 10-12
- 6:1 (female : male)
- 47% girls and 55% boys showed signs of growth delay

Pinhas et al 2011

Shared Philosophy of Care

"Comfort the afflicted and afflict the comfortable"

- Adolescent is ill and out of control with eating and exercise
- Family is the resource for support
- Work as a team - including parents!
- Recovery is a process –> nutritional recovery then emotional recovery
- Strong communication
- Trauma informed

Central Role of the Family

Parents have always been managing their children's lives and wellbeing. This does not change when there is an eating disorder. Professionals need to honour that

Central Role of the Family

- Even with hospitalization, most of recovery happens at home
- Caregivers are responsible for providing the majority of treatment interventions, including the majority of meal support
- When families are engaged and involved, treatment outcomes are improved

Central Role of the Family

- Eisler (2002) "As a clinician, what I am struck with time and time again is the similarity of the processes through which the family becomes organized around the problem"
  - "central organizing principle"

Kids need to eat

Food is the medicine we use to treat eating disorders

Communicating as a Team

- **CRUCIAL!!!**
- Always a loophole – e.g.
- Medical and mental health components are equally important
- Transparent and regular
- Different methods of communication

Team Roles

- Pediatrician/Family physician
- Dietitian
- Nurse
- Psychology
- Social Work/Family Therapist
- Parent educator/parent support

Pediatrician/Family Physician

- Gateway
- Medical stability
- Short term and long term monitoring of complications
- Case manager
- Medications (?)

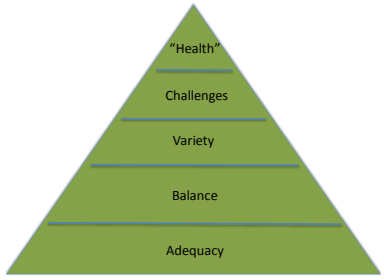
Dietitian

Medical and Therapeutic Roles

- Help achieve a healthy body weight
- Normalize eating behaviours
- Provide nutritional education

Food is Medicine

Nutritional framework



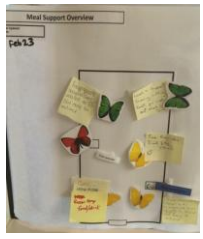
Adapted from Jessica Setnick RD

Nursing role and approach

- Medical stabilization
- Therapeutic role –
  - Language used
  - Rapport building to build engagement
  - Consistency
  - Trauma informed lens
    - Sensitive
    - Caring

Team support

Provision of meal support
- Consistency of care
- Build competency
- Highlight issues
- Prevent burnout!



Team support

Daily management
- Consistent message
- Containment
- Milieu management (for 2 or more patients)

Role of Psychologist

- 3 psychologists on our team—one full time, two part time
  - Assessment
  - Intervention
  - Consultation
  - Supervision
  - Research

Role of Social Worker / Family Therapist

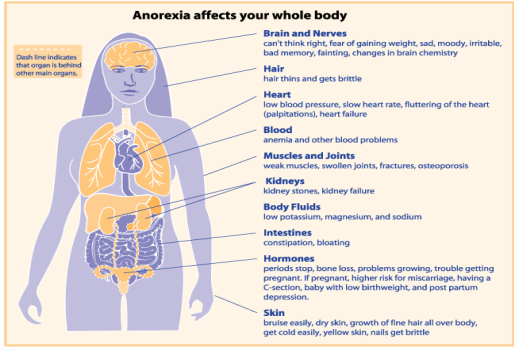
- Assess family structure and functioning
- Increase family knowledge regarding ED and family dynamics
- Increase competence regarding recovery
- Address areas that maintain ED/inhibit recovery
- Attend to sibling and extended family subsystems

Role of Family Educator

- Psycho-educational support for families
  - Formal educational workshops
  - Hands on role modelling, practice, support
  - 1:1 problem solving – what can we try differently if it's not working

Medical session outline

- Assessment
- Acute Medical management
- Outpatient management
- Lunch break



Illustrative example

- 14yo girl brought in by her mother
- Mumbling, speaks softly and slowly
- Looks cold and pale, hands purple
- Was 36kg 2 years ago

- Weight 27.3kg
- Height 154cm
- Temp 34.7
- PR 38
- SBP 80, DBP unrecordable
- BMI 12

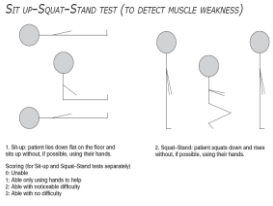
Assessment framework

Medical risks:

- Hydration
- Temperature
- Biochemical Abnormalities
- Cardiovascular Health – ECG abnormalities
- Body mass
- Muscular weakness
- Other medical concerns

Risk Assessment

- BMI: High risk <13
- Phys exam:
  - CVS, muscle power (SUSS test)
- Bloods: Electrolytes, LFTs, Glucose
- ECG



Psychiatric Assessment

- First chance to connect with family
- Opportunity for engagement with family, prepare them for action
- Sets the stage
- Tone—warm but grave, there is a crisis in the family, not reassuring re: medical severity
- Meet with family all together, and also youth and parents separately

Psychiatric Assessment

- Background information
- Psychiatric history (including family)
- Eating disorder specific
  - Current eating behavior
  - Body image
  - Compulsions/rituals (food/exercise)

Psychiatric Assessment

- Other current psychiatric symptoms—screen
  - Depression
  - Suicidality, non-suicidal self injury
  - Psychosis
  - Panic, GAD, social anxiety
  - OCD
  - PTSD/trauma history
  - Substance Use

Psychiatric Assessment

- Many youth with ED will present with other psychiatric symptoms
- Ensure we do not over-diagnose, over-pathologise (may be secondary to starvation)

Assessment

History – Physical

- Weight loss trajectory (highest vs lowest weights)
- Menstrual history
- Rough estimate of daily intake (parent vs patient)
- Activity levels – what changed
- Purging/laxative use

Acute complications

vs

Chronic complications

Some common ED presentations…

- Syncope/dizziness
  - Hypoglycemia
  - Hypokalemia
  - Hypotension and circulatory failure
- Chest pain/palpitations
  - Anxiety
  - Electrolyte disturbance and ECG abnormalities
- Bradycardia
- Constipation
- Suicidal ideation
- Self harm
- Overdose
- Distressed parent on a wait list

What a family doctor might hear/see:

- Feeling dizzy, fainting spells and unexplained collapses
- Secondary amenorrhea
- Rapid changes in weight
- Abdominal pain, nausea, vomiting with no explanation
- Concerned parents
- Concerned school

Criteria for urgent admission

AAP guidelines

- Heart rate <50/min day; 45/min night
- Systolic pressure <90 mm Hg
- Orthostatic changes in pulse (20 beats per min) or blood pressure (10 mm Hg)
- Arrhythmia
- Temperature <35.6 degrees Celsius
- <75% SBW or ongoing weight loss despite intensive management
- Body fat 10%
- Refusal to eat

BCCH guidelines

- <75% IBW
- HR <45/min
- BP drop >20mmHg
- Electrolyte derangement
- Cardiac abnormalities

BCCH Medical management guidelines

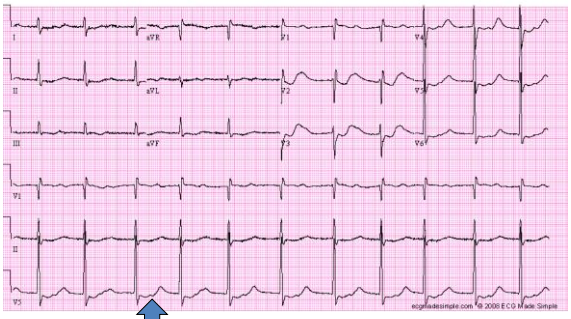
- Handout – PPO, Daily intake logs, What a meal looks like, Guidelines
- For acutely medically unstable patients who require cardiac monitoring
- Nurses not trained in meal support
- Focus on medical stabilisation ASAP

Cardiovascular complications

- Bradycardia
- Arrhythmia (irregular heart beat) – especially with low K+
- Postural drop in BP
- Postural tachycardia
- Mottling/cool peripheries
- Cold => abnormal hair growth (lanugo)

Rehydration

- **<u>If the gut works, use it</u>**
- Oral/NG rehydration solution
- 4-2-1 rule for maintenance and add losses (in % of body weight) and replace over 24 hours
- Rehydrate first then start food OR together with food



Depressed ST and U wave, also note QT is long

Treating Hypokalaemia

- Check ECG – V4
  - ST depression
  - QT prolongation
  - Low T waves -> U waves that overshadow T
- Intravenous potassium replacement with hydration fluids (can be 40mmol of KCl in 1000ml of NSaline +/- oral potassium) e.g. K+ 2.5 -> KCl in fluids AND 2 Slow K bd but checking K+ every 12hours if supervised and not purging
- DOES NOT HAVE TO HAPPEN OVERNIGHT

Hypoglycemia

- Some present with hypoglycemia
- Iv Dextrose OR oral intake
- Refeeding results in rebound hypoglycemia
- Recommend checking in AM and post meals and consider checking at 2AM
- Lasts for 2-3 days if eating

Phosphate replacement

- Oral phosphate 500mg daily/bid/tid depending on level of phosphate
- Watch out on Day 3-5 of refeeding
- Laxative abuse – check Mg and K and replace as these are likely to be low as well

Feeding Medically Unstable Inpatients

Medical Unit

- Physician Driven
- Typically RD not introduced at this time
- Daily Intake Logs
- Set Meal Plans: 1000-3000kcal/day

Refeeding Guidelines

- More evidence that it is safe to start at >1000cal per day especially in adolescents (Montreal, Melbourne, San Francisco)
- If there is self report of some oral intake (even minimal), it is best to start at 1500cal/day.
- Concerns about underfeeding being just as dangerous as overfeeding (Marsipan UK)
- Increase by 300cal (or meal plan change) every 1-2 days

Meal Plans

May help to:

- Restore to a healthy body weight
- Regulate eating and provide structure
- Promote return of hunger cues
- Decrease food related anxiety

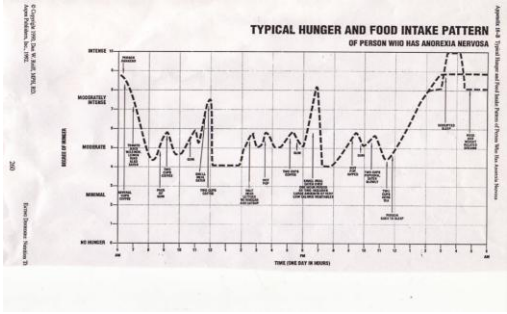
Does Every Patient Require a Meal Plan?

HUNGER GAMES…

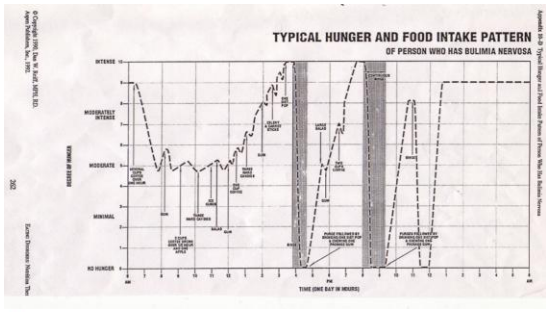
ED population:

- Recognition of hunger cues
- Hunger cues present in a variety of ways
- Satiety cues equally important

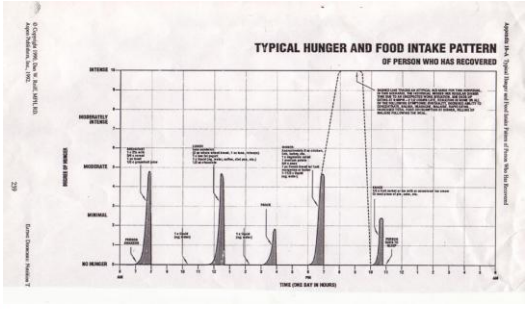
Hunger Pattern in AN



Hunger Pattern in BN



Typical Recovery Hunger Pattern



Nutritional Needs

Physical Considerations:

- Underweight
- Growth and Development
- Metabolism
- Activity Level

Metabolism

- Speed or rate of which you process food
- Food is the biggest promoter of metabolism!

Nutritional Needs

Typical Energy Requirements:

- Underweight adolescents typically require 3000kcal/day to make consistent weight gains of ~1kg per week
- Patients starting treatment at a healthy weight may only require 1800-2200kcal/day

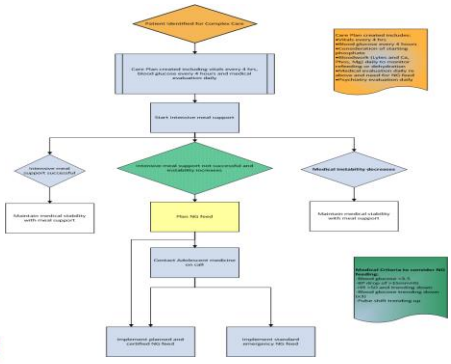
Tube Feeding

Medical Necessity?

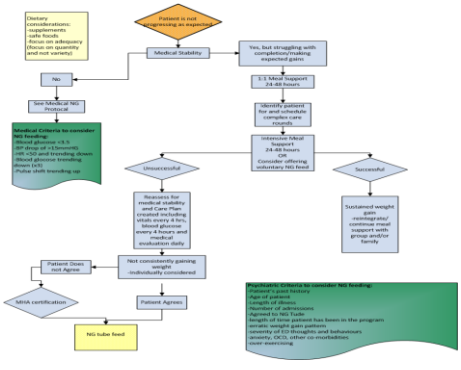
Consider

- System Design
- Supports
- Pathways of care

NG Medically Acute



NG Non-Medically Acute



Common questions from nurses

- Non compliant patients
  - Meals and feeds
  - Medication
  - Investigations
- Handling parents
- Managing activity
- Managing expectations re discharge

So the patient is on a wait list…

- Weekly review
- Weight
- BP and PR lying and standing
- Temp
- Bloodwork weekly if vomiting/using laxatives

Advice

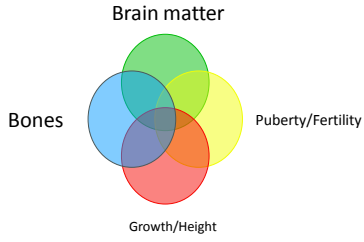
- Stop all physical activity e.g. PE and volleyball
- Encourage the parents to take charge of the meals and snacks and re-feed their child
- At the very least eat 1 meal per day with their child
- Fluids
- Resources

Illustrative example

15yo girl

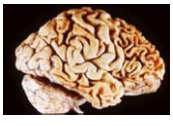
- Rhythmic gymnast
- In treatment with you
- Refuses to go beyond 90% of SBW
- "I'm a better at 90%"
- What next?

Long term complications



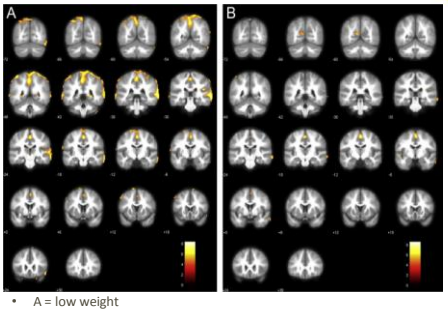
Impact on the brain

- Starvation reduces gray matter volume throughout the brain even if illness is <1yr duration
- Basal blood flow to the brain decreases in starvation
- Cerebral blood flow increases after weight gain



Impact on the brain

- Sex hormones are crucial for maturation of the limbic system
- Hippocampal volume increases during puberty (females>males) and this is correlated to estrogen levels rising
- Restoration of hypothalamic-pituitary axis may prevent dysregulation of mood and cognition



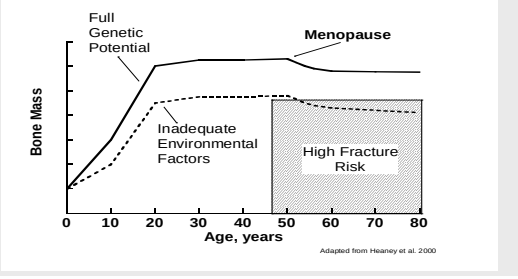
- A = low weight
- B = follow up weight restored
- Yellow = superimposed structural deficit compared to normal brain

Castro-Fornieles et al, Jn of Psych Research 2009, A cross-sectional and follow-up voxel-based morphometric MRI study in adolescent anorexia nervosa

Bone development in adolescence

- Bone structure changes in adolescence – laying down bone for the future
- Boys lay bone differently to girls
- Estrogen vs Testosterone

Life Cycle Changes in Bone Mass



Bone Mineral Accrual in the Adolescent Growth Spurt

Whiting et al. J Nutr, 2004

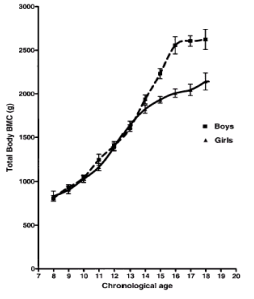


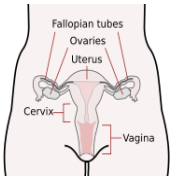
FIGURE 1 Total body bone mineral content (g) of the BMAS subjects at yearly age increments. Values are mean ± SEM. Subject numbers vary at each age point but were derived from 66 boys and 65 girls.

Impact on height

- Final height vs potential height
  - Mid parental height
  - Height centile charts
- **Bone damage in adolescence = LACK of normal progression (not really a deterioration)**
  - Bone age
  - Bone density

Impact on puberty

- Estrogen required for development of female sex organs
- Uterine and ovarian volumes changes with age in response to Estrogen
- FSH, LH and Estradiol



Determining Healthy Body Weights

- 50th centile BMI
- Growth chart or ANY weight and height history
- Weight at which menstruation stopped
- Bone age, DXA and body composition measurements
- Hormones (FSH, LH and Estradiol)
- Skin fold measurements
- Parental body type and heights
- Parental input – old photos, expectations

Maintenance

Maintenance = Achievement of a Healthy Body Weight

- Weight range (initiate 2kg into range)
- Moving targets in adolescence
- The battle re-begins…
- Nutritional Requirements
- Activity

Returning to Activity

What does the parent think??

- At least 95% of SBW
- Treat as a sports injury – rehab approach – start low and go slow
- Coaches need to be included in discussion
- Team sports encouraged over individual sports
- Meal plan may need to be increased

Returning to Activity

- The reasons are important
  - To change shape or weight?
  - To compensate for eating?
  - To burn calories?
- Activity is part of a healthy lifestyle, but we want exercise to be a choice, not a need

LUNCH

Handouts

- 3M guidelines and daily intake logs
- AAP State of the Art 2014
- School meal support template
- List of reading material and useful websites