Heart NIAGARA
www.heartniagara.com

Healthy Heart Schools' Program
2011 - 2012 Teachers Resource

Allied Health Centre, 5673 North Street, First Floor, Niagara Falls, Ontario L2G 1J4 Tel: 905-358-5552 Fax: 905-358-6033 info@heartniagara.com

Thank you for taking part in the Healthy Heart Schools' Program.

The Healthy Heart Schools' Program is designed to support you in delivering the physical education curriculum to increase student's knowledge of cardiovascular risk factors, heart healthy lifestyle choices and cardiopulmonary emergency response.

This enrichment program includes a personal assessment of fitness, a health questionnaire, an assessment day with height, weight, body mass index (BMI), waist circumference, blood pressure, total and HDL cholesterol testing, and a day for bystander CPR training. Height, weight and waist circumference are done behind free-standing banners with waist circumference taken over top of the student's gym clothes to insure student privacy.

The assessment and this resource are only teaching aides. This resource is designed to explain the assessment and what the numbers mean.

Teachers:

Please book the assessment and CPR days early in the semesters.

Our data indicates that more students will participate!

Call or email Heart Niagara at 905-358-5552 or schools@heartniagara.com to schedule the classes. She will need the class times and number of students in your class. We will then get the Assessment Booklets (that are filled out prior to the session) to you ASAP.

What Do The Numbers Mean?

Remember, if the assessment indicates there is an issue, regardless of how bad an adolescent's body mass index, waist circumference, blood pressure, or cholesterol are, adolescents are healthy. In the future they may be at risk but right now they are healthy.

Being Overweight

Weight, height, body mass index (BMI) and waist circumference (WC) numbers don't mean very much when looked at by themselves. The most important numbers are the BMI and WC, these numbers are used together to decide if an adolescent's size and shape will put them at risk for developing diabetes and heart disease.

BMI alone does not predict when weight can lead to future health problems because there are other factors that need to be considered.

BMI percentile compares the students' BMI to thousands of other adolescents who are of the same age, i.e., if a boy is 14 years old and his BMI falls at the 95th percentile, that means that 5% of 14-year old boys have a higher BMI and 95% have a lower BMI than that student. There are some adolescents that have a high BMI and are very fit and not overweight. The BMI is a simple calculation that does not consider body shape.

MEASURING WAIST CIRCUMFERENCE

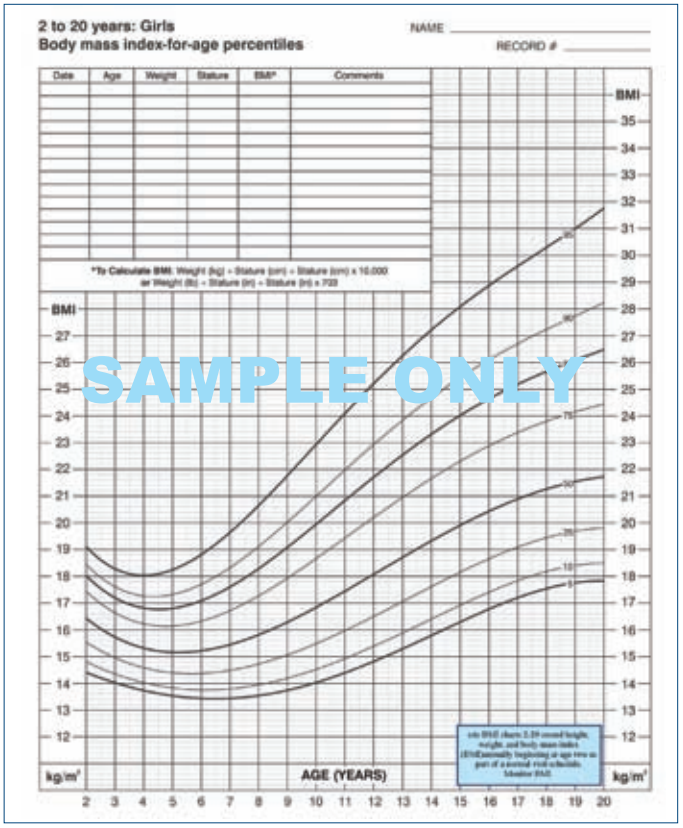
Body Mass Index (BMI) is the students weight compared to their height.

METRIC BMI FORMULA

$$BMI\ (kg/m^2) = \frac{\text{weight in kilograms}}{\text{height in meters}^2}$$

WC is a measurement taken around the student's waist over top of their t-shirt. The tape measure goes half way between the bottom rib and top of the hip bone.

Doing WC is important because an increased WC means there is more fat tissue inside the abdomen that affects how abdominal organs function. A high WC puts someone at risk for future diabetes and heart disease. Doing a WC helps us and the adolescent understand that the shape of our body not just the size is important.



When do we get worried?

When both the size and body shape are above the limits.

A combination of a high BMI and high WC may indicate a possibility for future risk of premature heart disease.

Male
Size Limit: BMI that is greater than or equal to the 95th percentile
Shape Limit: WC that is greater than or equal to 98cm

Female
Size Limit: BMI that is greater than or equal to the 95th percentile
Shape Limit: WC that is greater than or equal to 82.9cm

Referral: *If the combined limits are too high then there will be a referral sent to the student's family doctor and a letter and phone call home to the parents. The reason for the referral is that clinical guidelines suggest that family doctors become involved at this age when an adolescent's body shape and size are above the limits.*

Blood Pressure

In adolescents the systolic blood pressure is the important number to look at. Systolic pressure is the maximum amount of pressure there is when your heart pumps. A high systolic pressure means that there is a higher level of pressure than normal in the blood arteries. A high systolic pressure makes your heart work harder and can increase the risk for future heart disease and stroke.

In the Healthy Heart Schools' Program we use hospital quality blood pressure machines that are very accurate.

Every student has one blood pressure done and that blood pressure is recorded. If the BP is high, a second BP is done. If the second BP is high as well, we have the student sit and relax and the machine performs 6 automatic BP's and we record the average. If the average is also high the student is referred to their family doctor.

BLOOD PRESSURE

120 systolic

80 diastolic

Why be referred?

Being referred to the family doctor will give the student a chance to further discuss results and understand what they mean. It will also help to get the students' blood pressure under control if it is high before it becomes a problem in the future. In adolescents BP normals are calculated according to the student's age and height. In the Healthy Heart Schools' Program a Palm Pilot is used with a Statcoder software to calculate the range for each student's individual BP. Issues that may cause BP readings to be inaccurate: tight clothing, aggressive activity before BP is taken, nervousness and stress.

Referral: *Systolic BP limits are individualized according to the student's age and height percentile.*

About 10 students in every 4,000 assessed will need referral for further clinical BP evaluation.

Cholesterols

The cholesterols that are tested in the Healthy Heart Schools' Program are: Total Cholesterol (TC), High Density Lipoprotein (HDL), Non-HDL, and TC/HDL ratio. Important numbers that are used to assess adolescent cholesterols are HDL and Non- HDL. HDL is known as the good cholesterol. It carries bad cholesterols away from the cells and tissues and then back to the liver. Non-HDL are all the other cholesterols and cholesterol like molecules that are considered harmful if the levels are too high.

To assess if a student's cholesterols are imbalanced (good cholesterol vs. bad cholesterol) we use the HDL/Non-HDL ratio. The cholesterol limit we use to decide if we refer the student to their family doctor is the HDL/Non HDL ratio of less than 0.22. This ratio is not calculated on the students form but the nurses will discuss problem cholesterols with each student individually. Issues that may cause problem cholesterol levels in adolescents are most often genetics and medications (e.g., Accutane).

Referral: *Remember, if the assessment indicates there is an issue, regardless of how bad an adolescent's Body Mass Index, Waist Circumference, Blood Pressure, or Cholesterol are, adolescents are healthy. In the future they may be at risk but right now they are healthy.*

If the BMI, WC, BP, or Cholesterol are outside the limits set by the guidelines then there will be a referral sent to the student's family doctor, and, a letter and phone call home to the parents. The reason for the referral is that clinical guidelines suggest that this is the age when adolescents should be discussing these issues with health care professionals.

Family History

A positive family history indicating that a mother or father has had a heart attack or stroke is something that should be reviewed again by the family doctor. This may already have been done however, it is something that never hurts to follow up on.

Possible Solutions

For adults, adolescents, and families the main solutions for problem BMI's, WC's, BP's, and Cholesterols are the same simple messages we all know, **increase physical activity and improve healthy eating.**

Physical Activity

Adolescents should be getting 10,000 to 15, 000 steps a day on average. Count steps with a pedometer. Included in those steps there should be a period of activity every day for at least 30 to 45 minutes where they are a little bit short of breath.

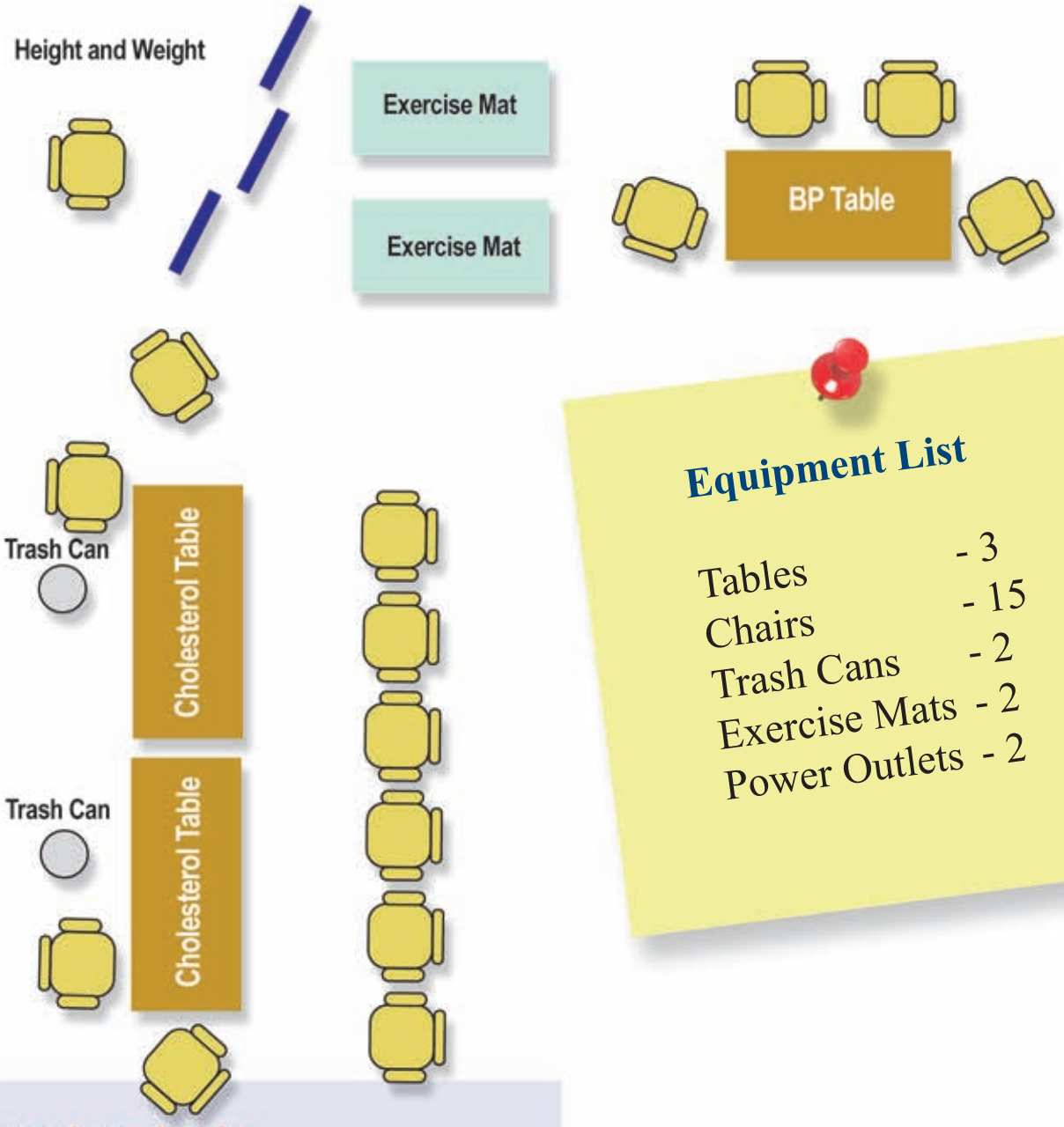
Nutrition

Portion size is the most important nutritional issue to be aware of and are defined by Health Canada. The quality of food that we eat is also very important. We all know that the most important foods are vegetables and fruit.

Heart Niagara is currently working on consolidating fact sheets for portion sizes and will upload them to our web site when they are completed.

Heart Niagara - Assessment Day Equipment Layout

Heart Niagara staff will set up when they arrive. Please have equipment available in the room or gym.



Equipment List

Tables	- 3
Chairs	- 15
Trash Cans	- 2
Exercise Mats	- 2
Power Outlets	- 2

Student clothing:

If students are in T-shirts the assessments go faster.

Logistics:

Please have the tables, chairs, garbage cans and exercise mat set near power outlets in the gym or area to be used.

Heart Niagara staff will arrive 15 minutes before class starts to help set up the equipment and organize the testing stations. *Thanks!*

Heart NIAGARA
www.heartniagara.com