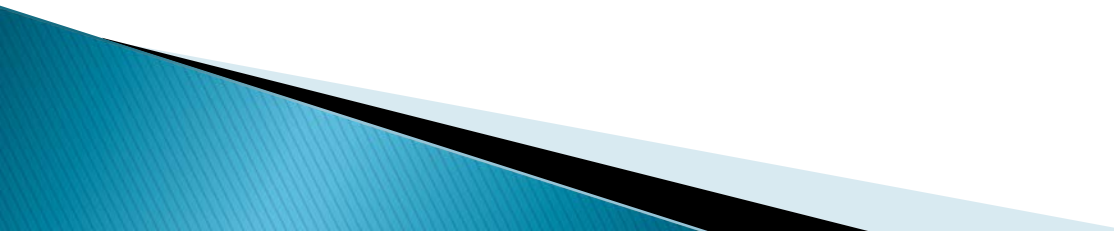


Down Syndrome and Nutrition

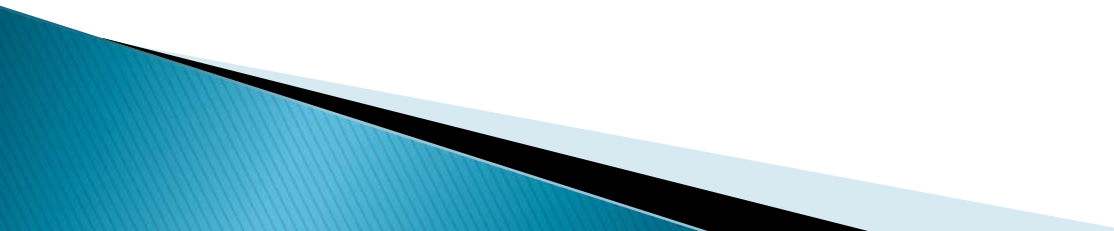
Cindy Wilson MS, RD, LMNT, CDCES



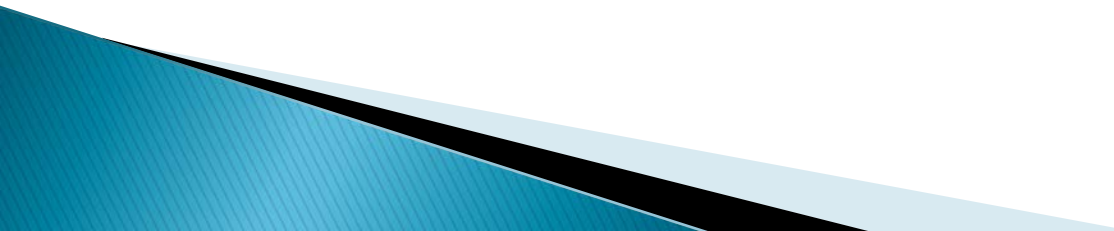
Children's Hospital and Medical Center Down Syndrome Clinic

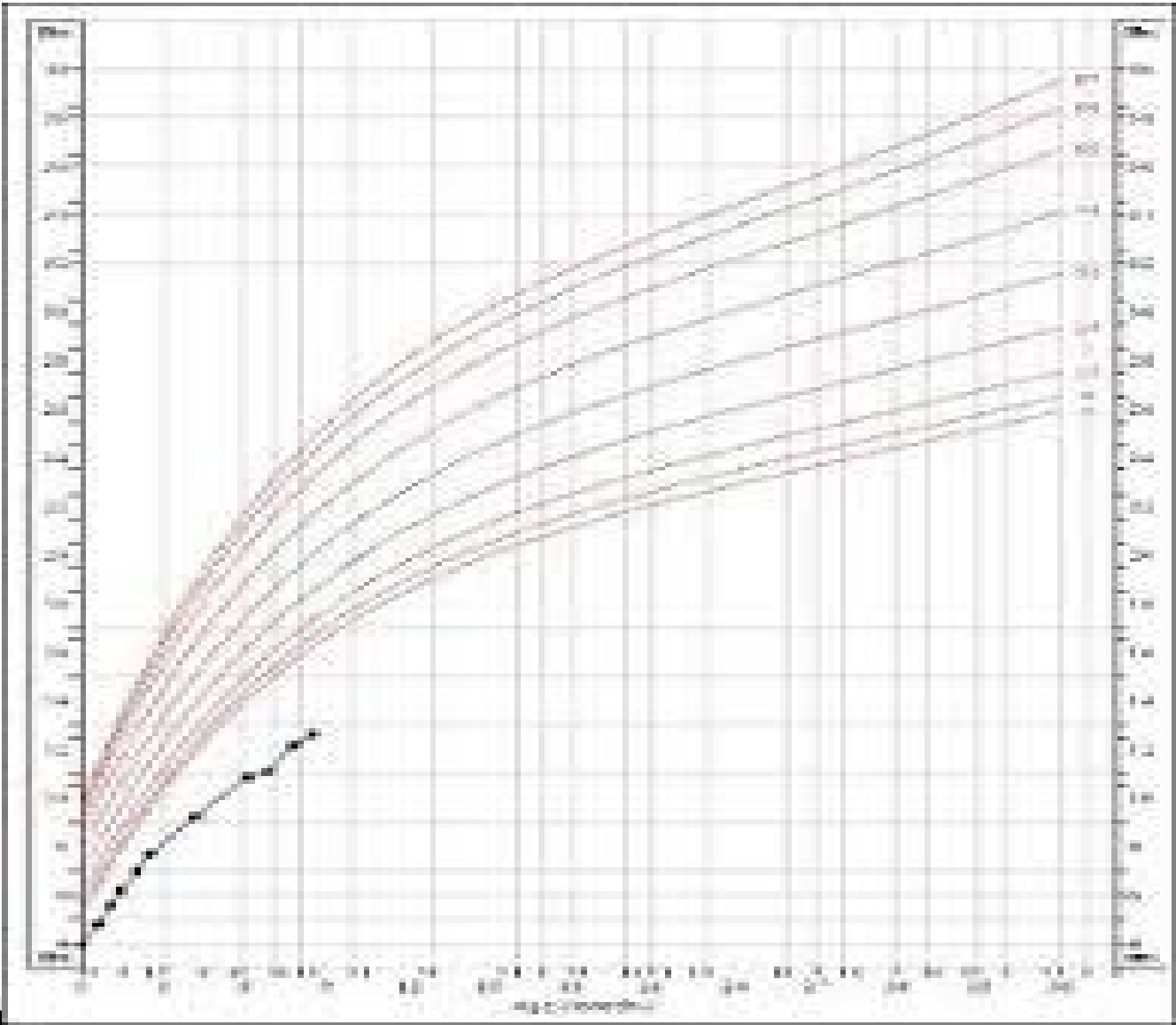
- ▶ A multidisciplinary team approach
 - ▶ Pediatric MD specialist
 - ▶ Behavioral Health
 - ▶ Speech Therapy
 - ▶ Occupational Therapy
 - ▶ Physical Therapy
 - ▶ Registered Dietitian
 - ▶ Social Work
- 

Areas of Concern with Down Syndrome, Growth and Nutrition

- ▶ 1. Growth Concerns
 - ▶ 2. Feeding Issues
 - ▶ Developing Autonomy and Healthy Choices for life.
- 

Growth Concerns: Growth Charts

- ▶ For tracking height and weight use growth charts specific to Down's Syndrome.
 - ▶ Looking to see if growth is crossing percentiles.
 - ▶ A decrease in growth velocity may indicate conditions such as hypothyroidism, Celiac disease, diabetes or cancer
- 



Growth Concerns Decreased Linear Growth

- ▶ Females
 - ▶ 1.5–2.5 Standard Deviations (SD) below population means until age 12.
 - ▶ Fall to 3 SD below mean after age 12
- ▶ Males
 - ▶ 2–3 SD below the mean to age 13
 - ▶ 2–4 SD below the mean age 13 to adulthood.

Growth issues: Weight

- ▶ From late infancy, children with Down Syndrome show a relative increase in mean weight for length and BMI (weight/height squared)
- ▶ Excessive weight is often a problem in adulthood. One study of individuals with Down's Syndrome found less than 15% were within desirable weight range; 20–30% were overweight and almost 50% were obese.

Growth Issues

- ▶ While Down's Syndrome specific growth charts are useful for tracking height and weight changes (growth velocity);
- ▶ Use of CDC growth charts should be used to monitor weight for length and BMI for age.

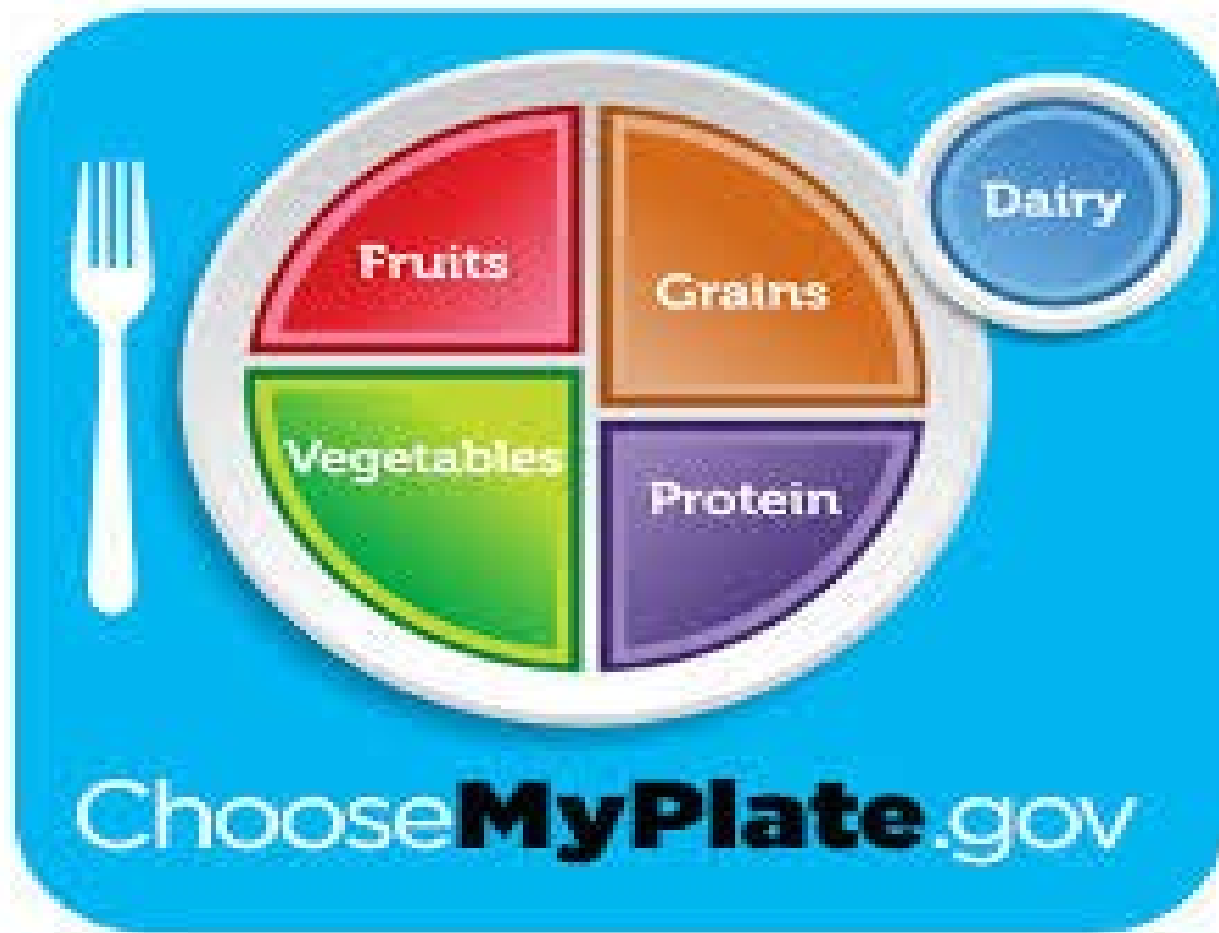
Feeding issues/Healthy Diet

- ▶ 6 servings of grains daily
- ▶ 5 Servings of fruits and vegetables
- ▶ 4 glasses of water daily
- ▶ 3 servings of dairy or substitute
- ▶ 2 hours or less of total screen time (also 2 servings of protein daily).
- ▶ 1 hour, at least of physical activity

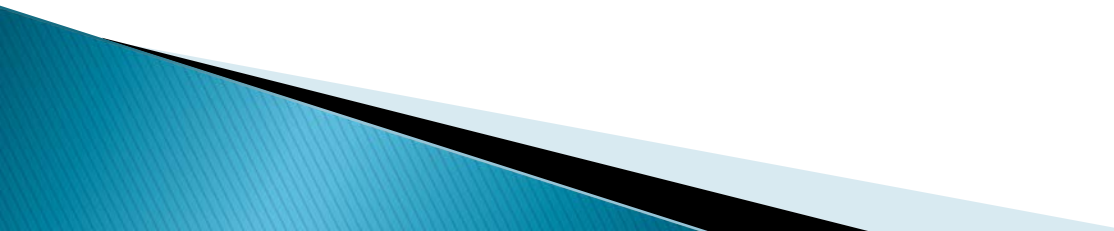


Feeding issues/Healthy Diet


Choose My Plate



Feeding Issues/ Picky Eaters What about supplements?

- ▶ You may want to consider a multivitamin if your child:
 - ▶ Is a picky eater
 - ▶ Is having trouble with food textures
 - ▶ Is on a calorie restricted diet for weight management
- 

Feeding Issues/Supplements: Tips for Selecting

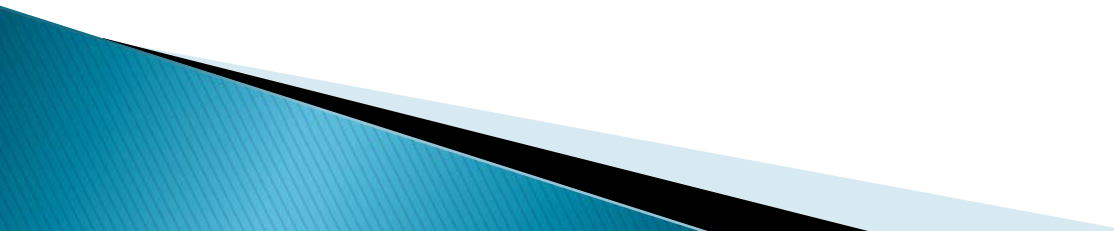
- ▶ Choose a product that provides a wide variety of vitamins and minerals in amounts from 50–100% of the RDA and less than the upper limit (UL) for each vitamin and mineral.
 - ▶ Choose vitamins that have been tested for quality.(Can look for a quality approval seal)
 - ▶ Check the expiration date
 - ▶ Be prepared to try several different brands.
- 

Feeding Issues/Supplements


what about Calcium and vit D?

- ▶ If your child has a milk intolerance or dislikes milk/dairy and will not drink a calcium and vitamin D fortified milk substitute such as soy milk, consider a calcium supplement.

Feeding Issues/Constipation- causes

- ▶ Low fluid intake
 - ▶ Low fiber intake
 - ▶ Poor muscle tone
 - ▶ Decreased activity
 - ▶ Hypothyroidism
- 

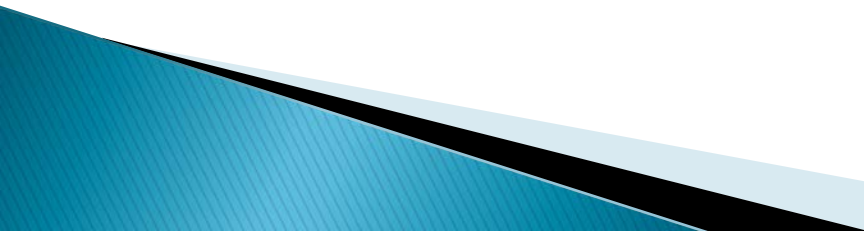
Feeding Issues/ constipation, what helps?

- ▶ Fluid–Serve water or milk with every meal and snack and encourage fluid breaks throughout the day.
 - ▶ Fiber–Whole grains, fruits and vegetables, fiber supplements. Increase fiber in the diet gradually.
 - ▶ Physical Activity–aim for at least 60 minutes of activity daily, it does not have to be all at once.
 - ▶ Medication– if fluid, fiber and activity don't solve the problem, ask your doctor about medications.
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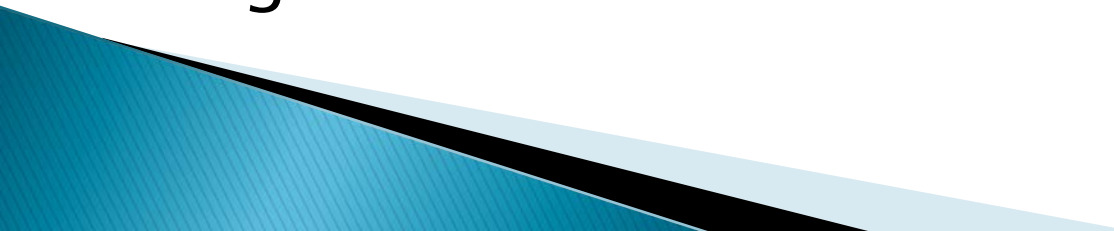
Feeding Issues/Division of Responsibility

- ▶ Parents Responsibility for feeding is to provide the structure, support and opportunities for eating.
- ▶ Children Choose how much and whether to eat from what parents provide.

Feeding issues / Division of Responsibility

- ▶ The parent is responsible for :
 - ▶ what, when and where of feeding.
 - ▶ Choosing and preparing the food.
 - ▶ Providing regular meals and snacks.
 - ▶ Make meal times pleasant.
 - ▶ Show children what they need to learn about food and mealtime behavior.
- 

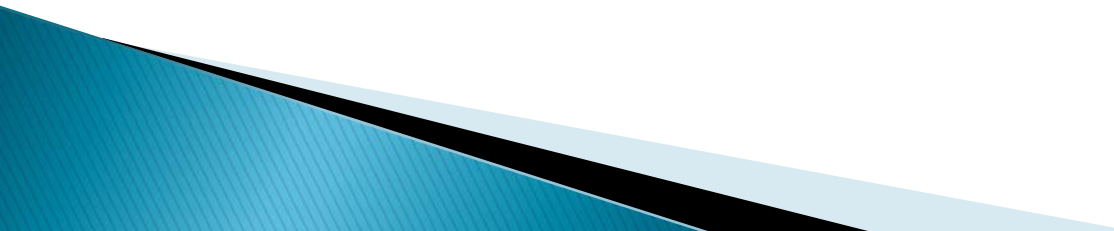
Feeding issues / Division of Responsibility

- ▶ Parent's Role continued:
 - ▶ Be considerate of children's lack of food experience without catering to likes and dislikes.
 - ▶ Not let children graze on food or beverages except for water between meals and snack times
 - ▶ Let children grow up to get bodies that are right for them.
- 

Feeding Issues / Division of Responsibility

- ▶ The important part for parents is trusting their children to decide how much and whether to eat. This can be the hard part because of our natural tendency to worry about how much they eat. But if parents do their jobs with feeding, children will do their jobs with eating.

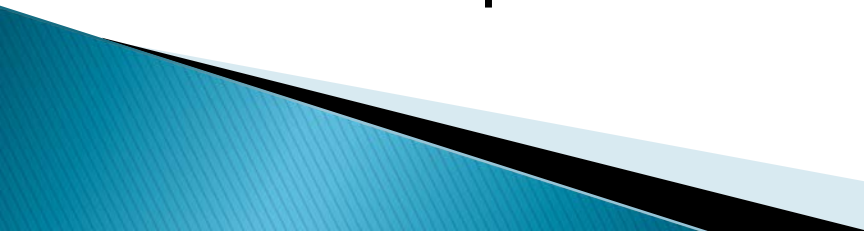
Feeding Issues/ Decision of Responsibility

- ▶ Children are responsible for:
 - ▶ The how much and whether they eat.
 - ▶ Children will eat.
 - ▶ Children will eat the amount they need.
 - ▶ They will learn to eat the food their family eats.
 - ▶ They will grow predictably.
 - ▶ They will learn to behave well at the table.
- 

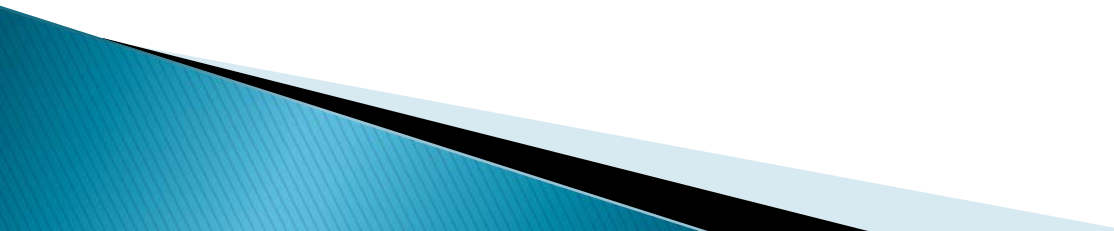
Feeding Issues/Division of Responsibility

- ▶ Trust me, trust my tummy.
- ▶ Food does more than just nourish the body, it develops trust and relationships.

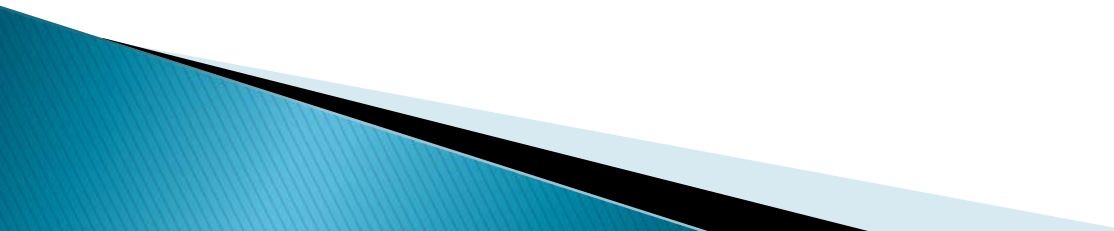
Feeding Issue/Picky Eater

- ▶ If your child isn't hungry don't force a meal or snack
 - ▶ Serve 3 meals and 2–3 snacks at about the same time every day. Offer only water to drink between meals and snacks.
 - ▶ When offering new foods, be patient and keep offering. Let them explore new foods without pressure to eat.
- 

Feeding Issues/Picky eater

- ▶ Talk about a food's color, texture, shape, not whether it tastes good.
 - ▶ Offer new foods with familiar/favorite foods.
 - ▶ Do not be a short order cook, preparing a separate meal for your child after they reject food, may encourage picky eating and sends the wrong message.
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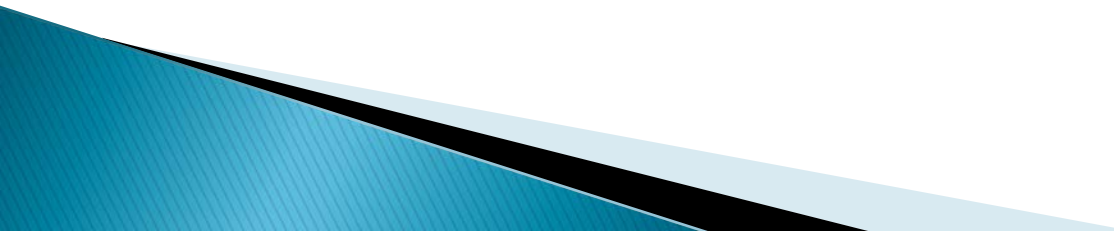
Feeding Issues/Picky Eating

- ▶ Try serving new vegetables with a favorite dip.
 - ▶ At the store, have your child help select fruits, vegetables and other healthy foods.
 - ▶ Set a good example, if you eat a good variety of healthy foods, your child is more likely to follow.
 - ▶ Turn off the TV and other distractions at mealtimes.
- 

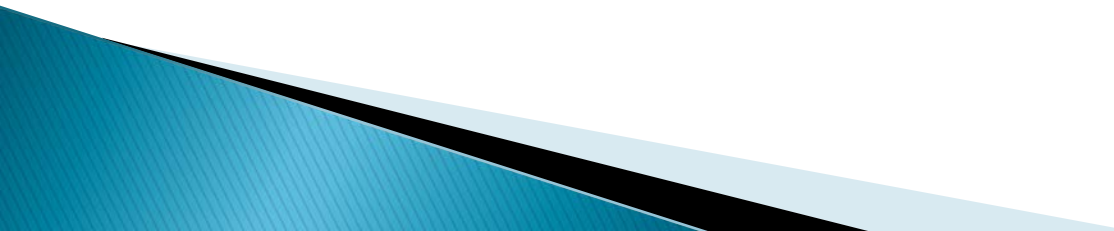
Feeding Issue/Picky Eater

- ▶ Withholding dessert sends the wrong message, that dessert is the best food. Try having dessert night 1–2 times a week or make dessert fruit, yogurt or other healthy choices. “Bribing” with dessert is not recommended as well.
- ▶ Add chopped broccoli, grated carrots, zucchini, or green peppers to spaghetti sauces or soups, top cereal with fruit

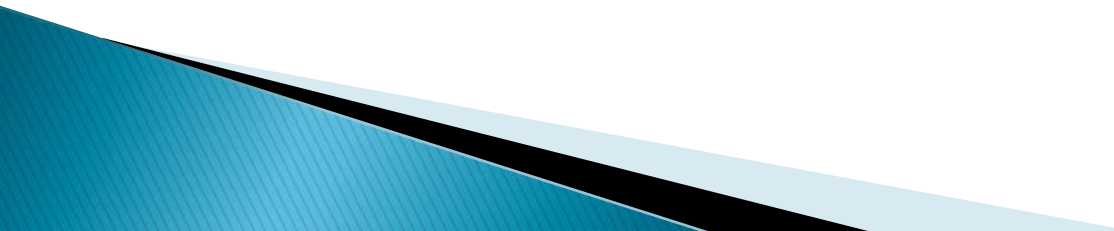
Feeding Issue/Weight Management

- ▶ The incidence of overweight and obesity is high in people with Down Syndrome beginning in childhood.
 - ▶ Food/calorie intake does not appear to be higher in people with Down Syndrome compared to their peers.
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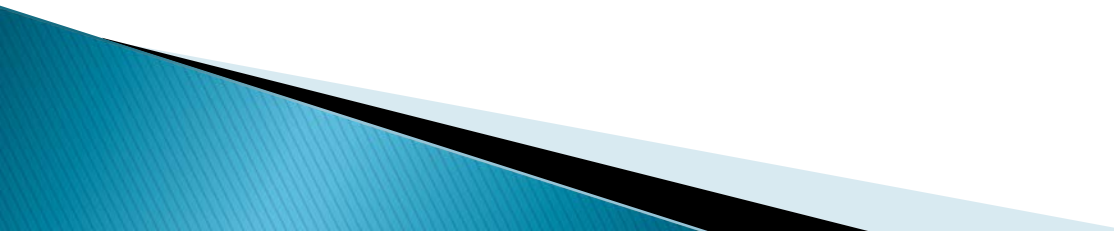
Feeding Issues/Weight Management

- ▶ Factors contributing to overweight may include:
 - ▶ Decreased resting energy expenditure/low tone
 - ▶ Reduced physical activity
 - ▶ Short stature
- 

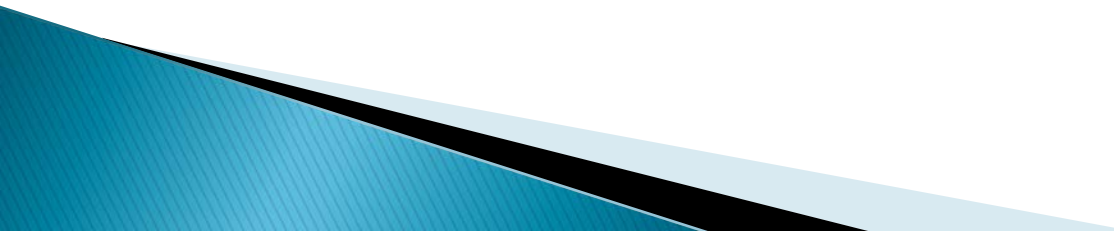
Feeding Issues/Weight Management

- ▶ Other causes for weight gain:
 - ▶ Hypothyroidism
 - ▶ Certain Medications
- 

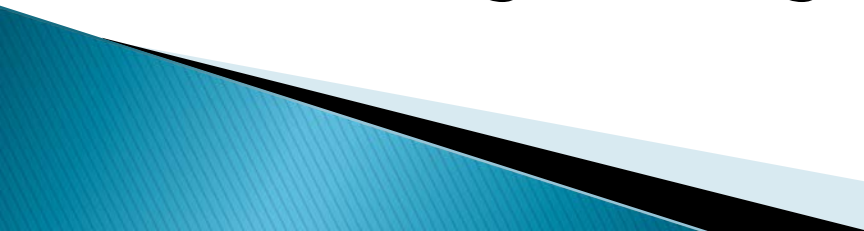
Feeding Issues/Wt. management

- ▶ Tips for preventing/managing weight gain:
 - ▶ Limit sugar sweetened beverages and juice.
 - ▶ Eat 5 servings of fruits/vegetables each day.
 - ▶ Engage in regular family meals 5–6 times a week.
 - ▶ Limit portion sizes.
- 

Feeding Issues/Wt. Management

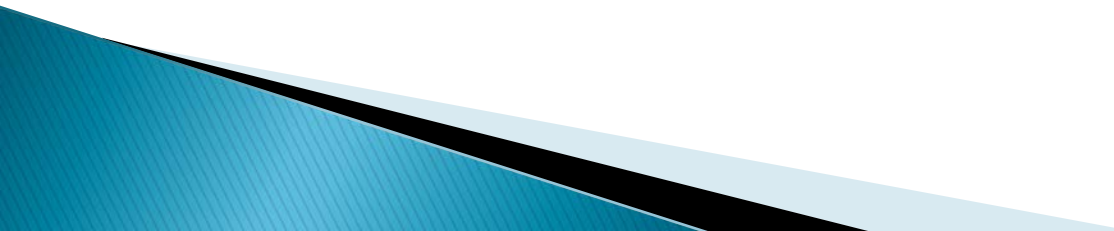
- ▶ More Tips:
 - ▶ No TV in child's room
 - ▶ Limit screen time to 2 hours or less daily.
 - ▶ Eat breakfast every day.
 - ▶ Eat out less often
- 

Feeding issues/Wt management

- ▶ Even more tips:
 - ▶ Participate in moderate to vigorous exercise for 60 minutes each day. Include family activities, friends and make it fun!
 - ▶ Diets don't work, encourage healthy lifestyle changes. Set measurable activity and intake goals and offer non-food rewards for whole family when met. These goals are preferred over weight loss goals.
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Feeding issues /Wt management

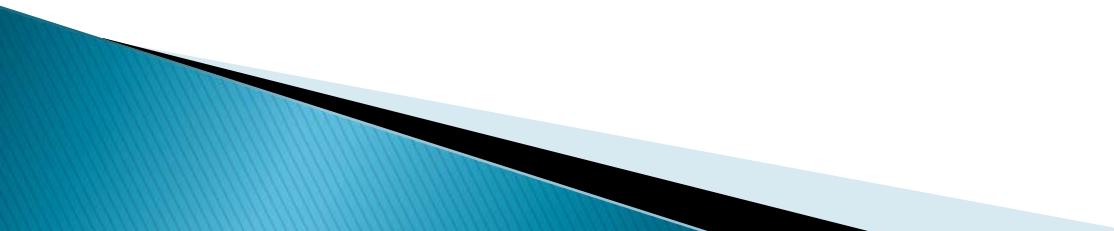
- ▶ Example food-related goal
 - ▶ We will have 2 vegetables served for supper every night.

 - ▶ Example activity-related goal
 - ▶ We will walk for 30 minutes 5 days a week.
- 

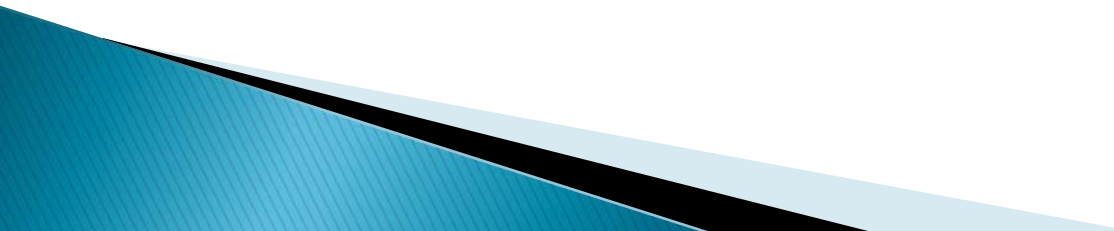
Developing Lifetime Healthy Choices

- ▶ Grocery Shopping
- ▶ Helping pick out and choose foods from shopping list.
- ▶ Cooking– adding foods ot dish, stirring, measuring, setting timer.
- ▶ Meal planning use My plate, flash cards, pictures of foods.

Take Home Points

- ▶ Children with Down Syndrome have different growth charts and grow differently from their peers.
 - ▶ Parents are responsible for what, when and where to feed their child. Children are responsible for how much and whether.
 - ▶ Expanding the diet takes time, patience and persistence
- 

Take Home Points

- ▶ Excess weight gain in individuals with Down syndrome is a common concern.
 - ▶ Diets don't work, instead healthy food choices and fun, consistent activity.
- 

Resources

- ▶ www.ChooseMyPlate.gov
 - ▶ www.ChooseMyPlate.gov/kids
 - ▶ www.ellensatterintitute.org (Division of Responsibility)
 - ▶ Down Syndrome Nutrition Handbook by Joan Guthrie Medlenm Phronesis Publishing, LLC, Lake Oswego, OR, 2006
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