Table 19. Uncommon Disorders Associated with Obesity

Alström-Hallgren syndrome. Autosomal-recessive trait, obesity, retinal degeneration with blindness in childhood, sensory nerve deafness, diabetes mellitis, small testes in males, and progressive nephropathy in adults.

Carpenter syndrome. Obesity; brachycephaly with craniosynostosis; peculiar facies with lateral displacement of inner canthi and apparent exophthalmos, flat nasal bridge, low-set ears, retrognathism, and high-arched palate; brachydactyly of hands with clinodactyly and partial syndactyly; preaxial polydactyly of feet with partial syndactyly; and mental retardation.

Cohen syndrome. Mild—childhood onset, truncal obesity, persistent hypotonia and muscle weakness, mild mental retardation, characteristic craniofacies with high nasal bridge, maxillary hypoplasia with mild downslant to palpebral fissures, high arched palate, short philtrum, small jaw, open mouth and prominent maxillary central incisors, mottled retina, myopia, strabismus, narrow hands and feet with shortening of metacarpals and metatarsals, simian crease, hyperextensible joints, lumbar lordosis, and mild scoliosis.

Cushing syndrome. Truncal obesity, hypertension, glucose intolerance, hirsutism, oligomenorrhea or amenorrhea, plethora, moon facies, buffalo hump, striae, ecchymoses, increased fatigability and weakness, and personality changes.

Growth hormone deficiency. Short stature, mild-to-moderate obesity.

Hyperinsulinemia. (From an insulin-secreting pancreatic tumor, hypersecretion by pancreatic beta cells or a hypothalamic lesion) Progressive obesity with hyperphagia, normal or excessive growth in stature, and signs and symptoms of hypoglycemia.

Hypothalamic dysfunction. (Due to tumor, trauma, or inflammation) Hyperinsulinemia and hyperphagia may be accompanied by headache, papilledema, impaired vision, amenorrhea or impotence, diabetes insipidus, hypothyroidism, adrenal insufficiency, somnolence, temperature dysregulation, seizures, and coma.

Hypothyroidism. Short stature; delayed sexual maturation; delayed union of epiphyses; lethargy; cold intolerance; hoarse voice; menorrhagia; decreased appetite; dry skin; aching muscles and delayed relaxation phase of deep tendon reflexes; progression to dull expressionless face; sparse hair; periorbital puffiness; large tongue; pale, cool, rough-feeling skin; and presence or absence of goiter.

Laurence-Moon-Biedl (Bardet-Biedl) syndrome. Autosomal-recessive trait, truncal obesity, retinal dystrophy/retinitis pigmentosa with progressively decreasing acuity, mental retardation, hypogenitalism, digital anomalies (polydactyly, syndactyly, or both), and nephropathy.

Polycystic ovary (Stein-Leventhal) syndrome. Irregular or absent menses, moderate hirsutism, weight gain shortly after menarche, increased ratio of luteinizing hormone to follicle-stimulating hormone, hyperandrogenemia, and increased levels of estrone with normal levels of estradiol. May occur in association with congenital adrenal hyperplasia, Cushing syndrome, hyperprolactinemia, or insulin resistance.

Prader-Willi syndrome. Obesity, hypotonia, and feeding problems in infancy; hyperphagia in childhood and adolescence; developmental delay; mental retardation; hypogonadism; short stature; small hands and feet; and strabismus.

Pseudohypoparathyroidism (type I). Short stature, round facies, short metatarsals and metacarpals, subcutaneous calcifications, moderate mental retardation, cataracts, coarse and dry skin, brittle hair and nails, hypocalcemia, and hyperphosphatemia.

Turner syndrome. Short stature, tendency to obesity, ovarian dysgenesis, broad chest with widely spaced nipples, prominent ears, narrow maxilla and small mandible, low posterior hairline, webbed posterior neck, elbow and knee anomalies, nail and skin anomalies, renal anomalies, and hearing impairment.

From Online Mendelian Inheritance in Man.

Table 20. 1989 Recommended Daily Dietary Allowance[a]

Age (Years) & Sex Group	Weight[b] (kg)	Weight[b] (lb)	Height[b] (cm)	Height[b] (In)	Fat-soluble Vitamins: Vitamin A (mcg RE)[c]	Fat-soluble Vitamins: Vitamin D (mcg)[d]	Fat-soluble Vitamins: Vitamin E (mg TE)[e]	Fat-soluble Vitamins: Vitamin K (mcg)	Water-soluble Vitamins: Vitamin C (mg)	Water-soluble Vitamins: Thiamin (mg)	Water-soluble Vitamins: Riboflavin (mg)	Water-soluble Vitamins: Niacin (mg NE)[f]	Vitamin B_6 (mg)	Folate (mcg)	Vitamin B_{12} (mcg)
Infants															
0.0–0.5	6	13	60	24	375	7.5	3	5	30	0.3	0.4	5	0.3	25	0.3
0.5–1.0	9	20	71	28	375	10	4	10	35	0.4	0.5	6	0.6	35	0.5
Children															
1–3	13	29	90	35	400	10	6	15	40	0.7	0.8	9	1.0	50	0.7
4–6	20	44	112	44	500	10	7	20	45	0.9	1.1	12	1.1	75	1.0
7–10	28	62	132	52	700	10	7	30	45	1.0	1.2	13	1.4	100	1.4
Males															
11–14	45	99	157	62	1,000	10	10	45	50	1.3	1.5	17	1.7	150	2.0
15–18	66	145	176	69	1,000	10	10	65	60	1.5	1.8	20	2.0	200	2.0
Females															
11–14	46	101	157	62	800	10	8	45	50	1.1	1.3	15	1.4	150	2.0
15–18	55	120	163	64	800	10	8	55	60	1.1	1.3	15	1.5	180	2.0

Adapted from the National Academy of Sciences-National Research Council.

[a] The allowances, expressed as average daily intakes over time, are intended to provide for individual variations among most normal persons as they live in the United States under usual environmental stresses. Diets should be based on a variety of common foods to provide other nutrients for which human requirements have been less well defined.

[b] The median weights and heights of those younger than 19 years were taken from Hammill PVV, et al. Physical growth: National Center for Health Statistics percentiles. *Am J Clin Nutr*. 1979;32:607–629. The use of these figures does not imply that the height-to-weight ratios are ideal.

[c] RE, retinol equivalent. 1 RE = 1 mcg retinol or 6 mcg beta-carotene.

[d] As cholecalciferol. 10 mcg cholecalciferol = 400 IU of vitamin D.

[e] TE, alpha-tocopherol equivalents. 1 TE = 1 mg d-alpha-tocopherol.

[f] NE, niacin equivalent. 1 NE = 1 mg of niacin or 60 mg of dietary tryptophan.

Table 21. Patient Teaching for Feeding Disorder

General Feeding Guidelines

The Importance of Role Modeling:

- Eat with your child. Young children eat better when adults are around!
- Eat a variety of fruits and vegetables.
- Use the food pyramid as a guide.

Establish a Consistent Mealtime Routine:

- Offer 3 meals and 2–3 snacks per day to help them develop a regular hunger-satiety schedule.
- Have children sit at the table for all meals; this will give them a signal that it is time to eat.
- Avoid asking children to eat, as this gives them the opportunity to refuse. Instead, use directives such as "Take a bite," or "It's time to pick up your spoon."
- Limit distractions during meals to help children focus on eating during mealtimes.
- Limit meal length to ~30 minutes.
- At the end of all meals, teach children to take "1 last bite" to signal the end of the meal. This can be a symbolic "last bite" where a spoon is gently touched to the child's lips.
- Once children have taken their "last bite," be sure to praise them to end the meal on a positive note.

Common Mealtime Concerns and Coping Strategies

Tantrums:

- Focus attention on children's appropriate mealtime behaviors.
- Cheer for children when they take a bite of food or show other appropriate mealtime behaviors. Be specific when praising them (e.g., "Great job taking your bite!" or "I like how you're picking up your spoon").
- Ignore refusal behaviors such as crying or throwing food off the table. Avoid responding or reacting to these behaviors. Instead, look away for ~20 seconds, and then remind them that it is time to take another bite. If the child throws food, wait until the end of the meal and have the child help pick up the food they have thrown.

Picky Eater:

- Children need to practice trying new food. It may take 10–15 trials of a new food before a child will learn to like the food.
- Have your child take "1 bite" of a new food at the end of 1 meal each day. Offer the same food every day for 1 week.
- Praise your child when he tastes new foods.

(*continued*)

Table 21. Patient Teaching for Feeding Disorder (continued)

Common Mealtime Concerns and Coping Strategies (*continued*)

The Grazer:

- Avoid allowing children to "graze" on small amounts of food and fluid throughout the day. These children do not feel hungry at mealtimes because they snack all day.
- Children who "graze" eat less (fewer calories) than children who have a consistent mealtime.
- Offer 3 meals and no more than 2–3 snacks each day.
- Remember that a snack can be a "mini meal" of nutrient dense foods and not necessarily "snack food."
- Restrict all snacks and drinks 30 minutes before and after meals. This way, children will not fill up on fluid just prior to or during the meal. By waiting 30 minutes until after the meal to offer fluid, children will not hold out for something to drink instead of eating.

The Short-Order Cook:

- "Short-order cook" caregivers may be preparing 4–5 meals hoping that their child will eat one of the choices.
- Offer the child a choice between 2 foods. Offer these choices at the start of the meal.
- If the child is too young or unable to choose, the caregiver may choose the food.
- When children refuse to eat, wait until the next meal or snack time to offer more food. This will teach children that they will not get a "better" food by refusing what has been offered.