

DIFFERENT OBESITY™

Bardet-Biedl
syndrome



He doesn't
want to choose
food over friends.
His brain does.

Not all obesity is the same. Recognize constant, hard-to-control hunger and weight gain starting from an early age. These could be signs of Bardet-Biedl syndrome (BBS), a rare condition that affects the brain, not the stomach.

Actor portrayals

Rhythm®
PHARMACEUTICALS



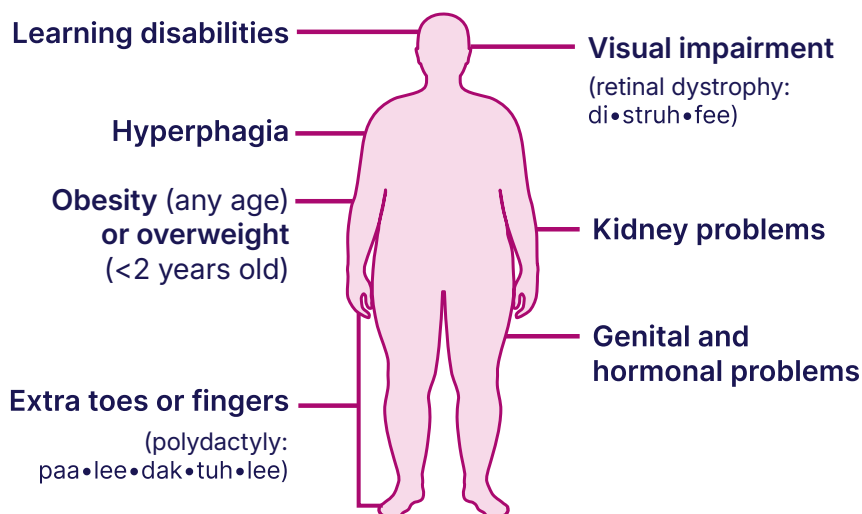
Actor portrayal

About BBS

Bardet-Biedl (pronounced BAR-day BEED-el) syndrome, also known as BBS, is a rare genetic disease that can cause obesity.

Unlike other forms of obesity, obesity due to BBS is caused by variants, or changes, in a BBS gene. BBS genes are inherited, meaning they are passed down from parent to child.

Signs and symptoms of BBS



BBS can affect many systems in the body

The signs, symptoms, and severity of BBS can vary from person to person. This can make it hard to diagnose.

Other symptoms of BBS may include:

- **Brain:** Speech delay, developmental delay, poor coordination, partial or total loss of smell
- **Skeletal:** Dental problems, shorter or webbed toes or fingers
- **Craniofacial (related to the bones and soft tissue of both the skull and the face):** Noticeable characteristic facial features
- **Body organs:** Differences in organ positioning
- **Hearing:** Hearing loss

Heart defects may be observed in people with BBS.



Find out if the symptoms you or your loved one are experiencing could be caused by BBS.

BBS can cause severe, early-onset obesity

Two key symptoms of BBS related to weight include:



Constant,
hard-to-control hunger



Severe,
early-onset obesity

For someone living with BBS, the brain cannot turn off hunger messages, making them feel hungry all the time. This constant, hard-to-control hunger is known as **hyperphagia**.

Hyperphagia is different from typical hunger

Typical hunger

- Feeling hungry in between meals
- Having cravings and increased appetite from time to time
- Eating past fullness at big occasions like Thanksgiving
- Eating to feel happy, when you're bored, or during times of stress (emotional eating)

VS

Hyperphagia

- Feeling hungry all the time
- Having continual thoughts about food
- Eating throughout any given day because you never feel full
- Eating to feel less hungry, but never achieving a feeling of fullness

The impact of obesity due to BBS

Constant, hard-to-control hunger can cause obesity in people living with BBS. In fact, some symptoms of BBS can be worsened by obesity.

If not appropriately managed, health problems related to obesity can include:



Diabetes



High blood pressure



Kidney issues



Heart-related issues (heart attack and stroke)



Orthopedic issues (problems with bones and muscles)



Overall mental health



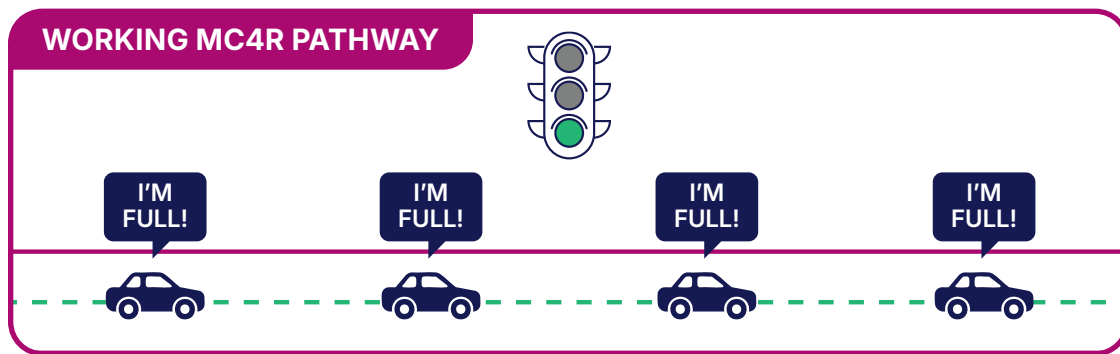
It's important to manage obesity due to BBS early. Talk to your doctor today.

The cause of hunger and obesity in BBS

There are specific parts of your brain that control hunger by sending and receiving signals from your body, telling it when it's hungry and when it's full. One part is called the MC4R pathway (after the melanocortin-4 receptor).

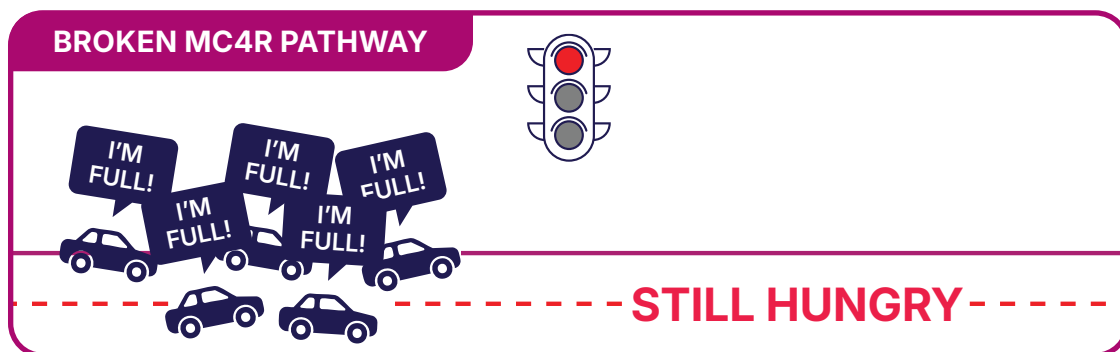
Certain rare genetic conditions that cause obesity, like BBS, change how these signals are sent to your body.

Like cars on a highway, messages in the body travel along the MC4R pathway



When the MC4R pathway is working, the traffic light is green. After eating, the cars can deliver messages in the brain that the body is full and it's time to stop eating.

When a BBS gene has a variant (or change), the MC4R pathway is broken



When the pathway is broken, the traffic light is red. Because of this, the cars can no longer deliver messages in the brain that the body is full. The body then believes that it needs more food, even though it has had enough.

Getting a diagnosis

Starting the conversation with your doctor is the first step toward diagnosis

BBS can be diagnosed by a doctor based on signs, symptoms, and genetic testing

- Some symptoms can be harder to spot in young children, so it's important to bring up any symptoms your child may be experiencing
- Some adults may not have received a BBS diagnosis previously; if you have signs or symptoms of BBS, it's important to discuss these with your doctor
- Doctors may use genetic testing together with clinical signs and symptoms to help diagnose BBS.

Talk to your doctor about genetic testing options for BBS

Find helpful downloadable resources such as the **Doctor Discussion Guide** and **Hyperphagia Checklist** by scanning the QR code here.



Rhythm
InTune



Rhythm InTune support

Connect with one-on-one educational support

If you or a loved one is living with obesity due to BBS, Rhythm InTune can help. Your Rhythm InTune Patient Education Manager (PEM)* can provide educational support and resources to help you better understand BBS and connect with others facing similar challenges.



Access educational
resources



Connect with
a community

Rhythm InTune Sign-up

Connect with a Patient Education Manager for one-on-one educational support.



*Patient Education Managers are employees of Rhythm Pharmaceuticals and do not provide medical care or advice. We encourage you to always speak to your healthcare providers regarding your medical care.



STILL NOT
ENOUGH

Get connected at DifferentObesity.com or
scan the QR code to access helpful resources.



Actor portrayal

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