

19. Epigenetics Female

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Hey, Mom, think your waistline won't affect your children? New research in epigenetics says you could be wrong.

By Sam Limmley
Staff Writer



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Taylor's pediatrician, Dr. Myra Garance, informed Ms. Bryson that for every 100 children who have at least one overweight parent, 62 will become overweight. This is a lot compared to the 24 out of 100 who will become overweight if they have lean parents. Garance is one of a growing number of doctors who makes an effort to keep parents up-to-date on new obesity research and what it means for the future of their children's waistlines.

"Since Taylor is more likely to become overweight, Taylor also has a greater chance of suffering health problems associated with overweight later in life," said Dr. Garance.

"I knew that there were negative health consequences of being overweight, but until now I didn't realize that my weight puts Taylor at higher risk" Ms. Bryson said.

In addition to explaining Taylor's increased risk for overweight and its associated health consequences, Dr. Garance explained why a parent's weight can increase the child's obesity risk: epigenetics.

Epigenetics is defined as changes in the way genes (DNA) are expressed. Genes are instruction manuals for the body, and are

Epigenetics explains why overweight parents are more likely to have overweight children



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62 out of 100 children develop obesity if they have at least one overweight parent

24 out of 100 children develop obesity if they have no overweight parents

These changes in how genes are read and expressed underlie an individual's risk for obesity. Epigenetic changes in a mother can be passed down to her child, influencing the child's chances of developing obesity in his or her lifetime. For example, a mother who eats an unhealthy diet can pass down epigenetic changes that influence her child's weight.

“Just like a switch turns a light on and off, epigenetics is the process that turns genes on and off.”

“Excess weight in parents determines the risk of obesity in their children because when parents become overweight, it creates epigenetic changes that they pass down to their children,” said Dr. Garance. “I give this information to mothers like Ms. Bryson because I think it's important for them to stay informed.”

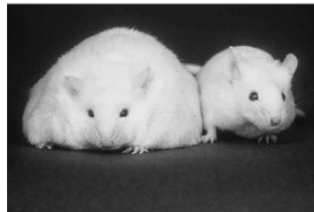
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Importantly for Ms. Bryson, learning about epigenetics and how it impacts Taylor's weight has helped her understand Taylor's risk for obesity.

“I was shocked to learn that my eating behaviors even before I had Taylor influence Taylor's weight in this way,” Ms. Bryson said.

Recent studies have confirmed the importance of these epigenetic processes. In a study published last month, researchers at the University of California, Los Angeles found that weight gain in mice was caused by epigenetic processes.

These studies offer clues to a big question in the field of obesity research: Why can't other known factors like the environment or genetics explain why children with heavy parents grow up to be overweight? This recent research shows that the answer is epigenetics.



Epigenetics explained why some offspring were overweight and others were not

“People think that obese people just lack willpower, but it was important to note that weight of the offspring was actually determined by the weight that their mothers gained before those offspring were even conceived” says the study's principal investigator, Dr. Steve Gonzalez, a professor of medicine at UCLA's Geffen School of Medicine.

Researchers are similarly finding large effects of epigenetics on weight gain in humans. A paper published in the New England Journal of Medicine this spring looked at whether weight loss in parents before conception would be associated with their child's weight.

The researchers found parents who had previously been overweight. Some of them had lost weight before having a child and others had lost weight after the child was born. The researchers looked for differences in the weight of their children as they grew up. They found that parents who had lost weight before their child was conceived had children who weighed less.

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In light of this information, Ms. Bryson is turning to her child's pediatrician, Dr. Garance, to find out how this will affect Taylor. Like Taylor's mother, parents concerned about obesity should discuss the issue with their family physician and monitor their child's growth.

"We now know a lot more about obesity and its epigenetic roots, but until there's a quick fix, the treatment will be the same," Dr. Garance said. "Kids need to have better diets and need to exercise more."



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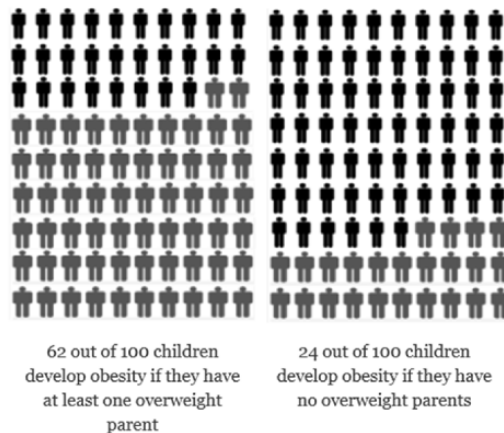
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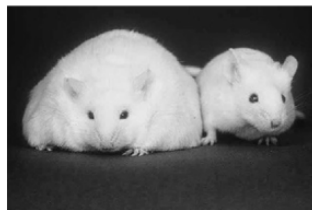
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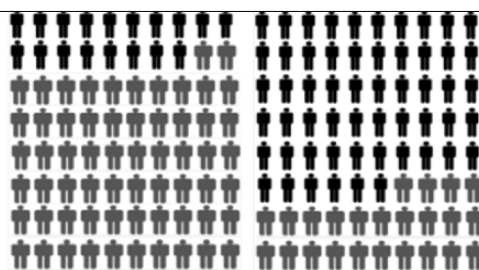
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A team of researchers in the 1970's started to question why men who were overweight before they fathered a child were more likely to have children who became overweight later in life. This early work led scientists to believe that a father's own health behavior can influence the way his genes are expressed, and can also alter gene expression in his future children.

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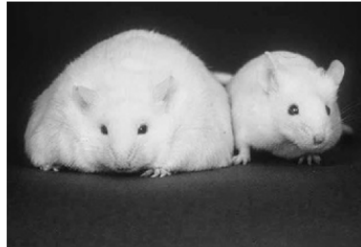
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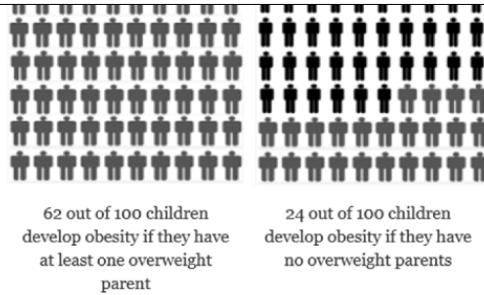
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The researchers recruited pairs of twins that had similar body weight at the beginning of the study. If weight is genetic, then identical twins (who share 99.9% of their genes) should gain weight similarly. Conversely, non-twins should gain different amounts of weight. In the study, all participants were physically inactive and ate the same diet for 100 days.

The researchers compared whether weight gained by identical twins was more similar than that gained by two randomly selected (and thus unrelated) participants. They found that twins had similar weight gain, but that non-twins gained very different amounts of weight.

The researchers concluded that since identical twins share almost all of their genes, genetics played a major role in weight gain.

“The things that lead to weight gain are complex” confirms Dr. Jane Sullivan, the study's principal investigator. “But these studies show that genetics play a big role in explaining obesity.”



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22. Genetics Male

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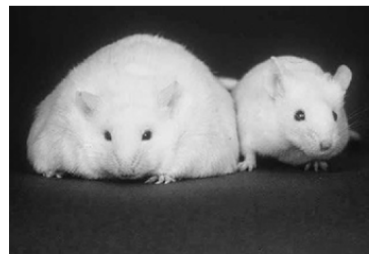
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especially important in establishing the family environment. This environment sets in motion behaviors that children continue throughout their lives and affects their risk of becoming obese.

Differences in family environments underlie an individual's risk for obesity. The family environment established by mothers creates weight-related habits and

behaviors that are passed down to their child, influencing the child's chances of developing obesity in his or her lifetime. For example, mothers who eat unhealthy snacks make it seem normal and acceptable for children to eat those foods at snack time.



62 out of 100 children develop obesity if they have at least one overweight parent

24 out of 100 children develop obesity if they have no overweight parents

“The family environment is defined as habits, behaviors, and beliefs that parents set.”

“Excess weight in parents determines the risk of obesity in their children because overweight parents develop negative habits and behaviors that they pass down to their children,” said Dr. Garance. “I give this information to mothers like Ms. Bryson because I think it’s important for them to stay informed.”

A team of researchers in the 1970’s started to question why mothers who were overweight were more likely to have children who became overweight later in life. This early work led scientists to believe that a mother’s own health behaviors influence the family environment that they establish for their children.

Importantly for Ms. Bryson, learning about the family environment and how it impacts Taylor’s weight has helped her understand Taylor’s risk for obesity.

“I was shocked to learn that my behaviors influence Taylor’s weight in this way,” Ms. Bryson said.

Recent studies have confirmed the importance of the family environment in weight. In a study published last month, researchers at the University of California, Los Angeles found that weight gain in mice was caused by the family environment.

These studies offer clues into a big question in the field of obesity: How do unhealthy habits that parents establish persist once parents are no longer around? This recent research shows that the answer is the early family environment.

“People think that obese people just lack willpower, but it was important to note that the amount and type of food the mouse body craves is established early by the family food environment that they grew up in,” says the study’s principal investigator, Dr. Steve Gonzalez, a professor of medicine at the Geffen School of Medicine at UCLA.



The family environment explained why some offspring were overweight and others were not

Researchers are similarly finding large effects of the family environment on weight gain in humans. A paper published in the New England Journal of Medicine this spring looked at the effect of the childhood family environment on food behaviors and preferences. The researchers recruited pairs of twins who were raised in separate households as children, where one of the twins was obese while the other was not.

Since identical twins share 99.9% of their genes, differences in weight among these twins from separate households would be largely due to the family environment they grew up in, rather than something biological or genetic. The researchers measured each twin’s current and past eating behaviors, and their preferences for fatty foods.

They found that the obese twin displayed more of a preference for unhealthy foods and actually overate more fatty foods than their non-overweight twin, during childhood and young adulthood.

The researchers concluded that the family environment that the obese twin grew up in played a major role in establishing their preference for and eating of unhealthy foods, and this caused weight gain.

"The things that lead to weight gain are complex," confirms Dr. Jane Sullivan, the study's principal investigator. "But these studies show that the family environment plays a big role in explaining obesity.

The studies show how weight-related behaviors like food preference and consumption of fatty foods are taught by parents (rather than being due to innate preferences and cravings), which explains a child's risk for obesity."

In light of this information, Ms. Bryson is turning to her child's pediatrician, Dr. Garance, to find out how this will affect Taylor. Like Taylor's mother, parents concerned about obesity should discuss the issue with their family physician and monitor their child's growth.

"We now know a lot more about obesity and its roots in the family environment, but until there's a quick fix, the treatment will be the same," Dr. Garance said. "Kids need to have better diets and need to exercise more."



24. Fam Env Male

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Hey, Dad, think your waistline won't affect your children? New research on the family environment says you could be wrong.

By Sam Limmley
Staff Writer



Taylor Bryson's pediatrician informed Taylor's dad, Alex Bryson, that he was responsible for Taylor's risk of becoming an obese adult. Mr. Bryson is now concerned about Taylor's future health.

PITTSBURGH - Like many elementary school children growing up in America today, Taylor Bryson loves to play at the park and spend time with friends and family. Also like many children growing up in America, Taylor has a father who is overweight. Taylor's dad, Alex Bryson, learned at Taylor's annual pediatrician visit that having an overweight father increases Taylor's risk for becoming an overweight adult.

Taylor's pediatrician, Dr. Myra Garance, informed Mr. Bryson that for every 100 children who have at least one overweight parent, 62 will become overweight. This is a lot compared to the 24 out of 100 who will become overweight if they have lean parents. Garance is one of a growing number of doctors who makes an effort to keep parents up-to-date on new obesity research and what it means for the future of their children's waistlines.

"Since Taylor is more likely to become overweight, Taylor also has a greater chance of suffering health problems associated with overweight later in life," said Dr. Garance.

"I knew that there were negative health consequences of being overweight, but until now I didn't realize that my weight puts Taylor at higher risk" Mr. Bryson said.

In addition to explaining Taylor's increased risk for overweight and its associated health consequences, Dr. Garance explained why a father's weight can increase his child's obesity risk: the family environment.

The family environment is defined as habits, behaviors, and beliefs that parents set. Fathers are

The family environment explains why overweight parents are more likely to have overweight children



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especially important in establishing the family environment. This environment sets in motion behaviors that children continue throughout their lives and affects their risk of becoming obese.

Differences in family environments underlie an individual's risk for obesity. The family environment established by fathers creates weight-related habits and

behaviors that are passed down to their child, influencing the child's chances of developing obesity in his or her lifetime. For example, fathers who eat unhealthy snacks make it seem normal and acceptable for children to eat those foods at snack time.

"The family environment is defined as habits, behaviors, and beliefs that parents set."

"Excess weight in parents determines the risk of obesity in their children because overweight parents develop negative habits and behaviors that they pass down to their children," said Dr. Garance. "I give this information to fathers like Mr. Bryson because I think it's important for them to stay informed."

A team of researchers in the 1970's started to question why fathers who were overweight were more likely to have children who became overweight later in life. This early work led scientists to believe that a father's own health behaviors influence the family environment that they establish for their children.

Importantly for Mr. Bryson, learning about the family environment and how it impacts Taylor's weight has helped him understand Taylor's risk for obesity.

"I was shocked to learn that my behaviors influence Taylor's weight in this way," Mr. Bryson said.

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These studies offer clues into a big question in the field of obesity: How do unhealthy habits that parents establish persist once parents are no longer around? This recent research shows that the answer is the early family environment.

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In light of this information, Mr. Bryson is turning to his child's pediatrician, Dr. Garance, to find out how this will affect Taylor. Like Taylor's father, parents concerned about obesity should discuss the issue with their family physician and monitor their child's growth.

"We now know a lot more about obesity and its roots in the family environment, but until there's a quick fix, the treatment will be the same," Dr. Garance said. "Kids need to have better diets and need to exercise more."



25. Gene x Fam Female

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Hey, Mom, think your waistline won't affect your children? New research on how genes are influenced by the family environment says you could be wrong.

By Sam Limmley
Staff Writer



Taylor Bryson's pediatrician informed Taylor's mom, Alex Bryson, that she was responsible for Taylor's risk of becoming an obese adult. Ms. Bryson is now concerned about Taylor's future health.

PITTSBURGH - Like many elementary school children growing up in America today, Taylor Bryson loves to play at the park and spend time with friends and family. Also like many children growing up in America, Taylor has a mother who is overweight. Taylor's mom, Alex Bryson, learned at Taylor's annual pediatrician visit that having an overweight mother increases Taylor's risk for becoming an overweight adult.

Taylor's pediatrician, Dr. Myra Garance, informed Ms. Bryson that for every 100 children who have at least one overweight parent, 62 will become overweight. This is a lot compared to the 24 out of 100 who will become overweight if they have lean parents. Garance is one of a growing number of doctors who makes an effort to keep parents up-to-date on new obesity research and what it means for the future of their children's waistlines.

"Since Taylor is more likely to become overweight, Taylor also has a greater chance of suffering health problems associated with overweight later in life," said Dr. Garance.

"I knew that there were negative health consequences of being overweight, but until now I didn't realize that my weight puts Taylor at higher risk" Ms. Bryson said.

In addition to explaining Taylor's increased risk for overweight and its associated health consequences, Dr. Garance explained why a parent's weight can increase their child's obesity risk: a process called the gene-environment interaction.

The term gene-environment interaction refers to a situation where one's response to their surroundings depends on

An interaction between genes and the family environment explains why overweight parents are more likely to have overweight children



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surroundings depends on one's genes.

Genes are instruction manuals for the body, and are the directions for building all the proteins that make the body function. They are inherited from biological parents. The family environment is defined as habits, behaviors, and beliefs that are set by parents and shared by the family. Mothers are especially important in establishing the family environment.



62 out of 100 children develop obesity if they have at least one overweight parent

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So a gene-environment interaction refers to the ways in which a child's genes predispose them to respond to their environment in a certain way and thus contribute to the child's chances of developing obesity in his or her lifetime. For example, a mother can pass down genes that predispose her child to become overweight, but these genes are only triggered when she models unhealthy eating and doesn't encourage exercise.

"The term gene-environment interaction refers to a situation where one's response to their surroundings depends on one's genes."

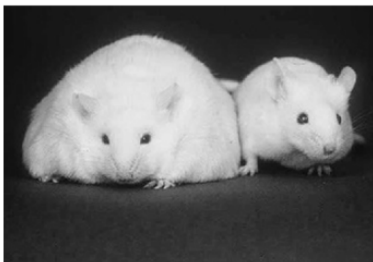
"Excess weight in parents determines the risk of obesity in their children because of a combination between the genes that they pass down to their children and the family environment that they establish and maintain" said Dr. Garance. "I give this information to mothers like Ms. Bryson because I think it's important for them to stay informed."

A team of researchers in the 1970's started to question why mothers who were overweight were more likely to have children who became overweight later in life. This early work led scientists to believe that the genes a mother passes down can interact with the family environment to affect her children.

Importantly for Ms. Bryson, learning about the gene and family environment interaction for weight, and how it impacts Taylor, has helped her understand Taylor's risk for obesity.

"I was shocked to learn that my genes and behavior can put Taylor at risk like that," Ms. Bryson said.

Recent studies have confirmed the importance of the gene-family environment interaction. In a study published last month, researchers at the University of California, Los Angeles found that weight gain in mice was caused by the gene-environment interaction.



The gene-family environment interaction explained why some offspring were overweight and others were not

These studies offer clues to a big question in the field of obesity: Why can't just genes or the family environment alone explain the development of obesity? This recent research shows that the answer is that genes and the family environment interact with one another.

"People think that obese people just lack willpower, but it was important to note that the effects of eating a high fat diet depended on the mice's genes," says the study's principal investigator, Dr. Steve Gonzalez, a professor of medicine at the Geffen School of Medicine at UCLA.

Researchers are similarly finding large effects of gene-family environment interactions on weight gain in humans. A paper published in the New England Journal of Medicine this spring investigated the combined effect of genes and the family environment using identical twins raised apart compared to identical twins raised together.

Since identical twins share 99.9% of their genes, the effects of the family environment can be measured by comparing weight similarity among identical twins raised together (who share an environment) to weight similarity among to identical twins raised apart (who don't share an environment)

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As expected, researchers found that weight between identical twins was very similar. However, it was much more similar if identical twins were raised together. This meant that genes predisposed some twins to gain weight, but that this effect was greatest if they also grew up in an environment that promoted weight gain.

The researchers concluded that an interaction between genes and the family environment explained weight gain amongst the twins.

"The things that lead to weight gain are complex," confirms Dr. Jane Sullivan, the study's principal investigator. "But these studies show that both genes and the family environment play a big role in explaining obesity."

The studies show how children who inherit obesity genes from their parents are more likely to be overweight if they are also raised by overweight parents, because these parents establish environments that promote weight gain."

In light of this information, Ms. Bryson is turning to her child's pediatrician, Dr. Garance, to find out how this will affect Taylor. Like Taylor's mother, parents concerned about obesity should discuss the issue with their family physician and monitor their child's growth.

"We now know a lot more about obesity and its roots in gene-family environment interactions, but until there's a quick fix, the treatment will be the same," Dr. Garance said. "Kids need to have better diets and need to exercise more."



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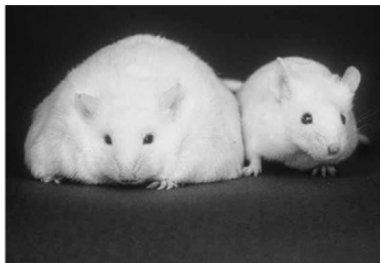
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In light of this information, Mr. Bryson is turning to his child's pediatrician, Dr. Garance, to find out how this will affect Taylor. Like Taylor's father, parents concerned about obesity should discuss the issue with their family physician and monitor their child's growth.

"We now know a lot more about obesity and its roots in gene-family environment interactions, but until there's a quick fix, the treatment will be the same," Dr. Garance said. "Kids need to have better diets and need to exercise more."



27. Control Causal Female

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Hey, Mom, think rates of obesity have leveled off? New research says you could be wrong.

By Sam Limmley
Staff Writer



Taylor Bryson's pediatrician informed Taylor's mom, Alex Bryson, that she was responsible for Taylor's risk of becoming an obese adult. Ms. Bryson is now concerned about Taylor's future health.

PITTSBURGH - Like many elementary school children growing up in America today, Taylor Bryson loves to play at the park and spend time with friends and family. Also like many children growing up in America today, Taylor is at risk for becoming an obese adult. Taylor's mom, Alex Bryson, learned at Taylor's annual pediatrician visit that obesity rates have been increasing in recent years, with 1 out of every 3 American adults now considered obese.

Taylor's pediatrician, Dr. Myra Garance is one of a growing number of doctors who makes an effort to keep mothers up-to-date on new obesity research and what it means for the future of their children's waistlines.

"Excess weight is increasingly common in the United States," said Dr. Garance. "Being overweight increases a person's chances of suffering health problems later in life."

"I knew that there were negative health consequences of being overweight, but until now I didn't realize how severe they were," Ms. Bryson said.

In addition to explaining the negative health consequences of being overweight that could impact Taylor, Dr. Garance explained that rates of overweight are increasing year after year.

A great number of studies in epidemiology have shown that obesity is far more prevalent now than it was only a few decades

New research shows that American children today are likely to grow up to be overweight



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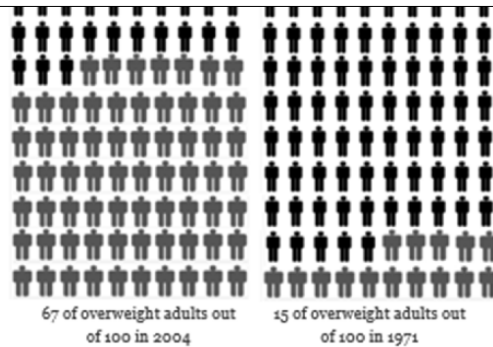
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ago.

Epidemiology is defined as the study of the prevalence (or how common) certain diseases are and how those diseases relate to health. Studies in epidemiology help us identify how common it is for people to become obese, as well as how much the rate of overweight and obesity diagnoses are increasing across time. Epidemiology can help us identify how rates of obesity change.



“Excess weight is a much bigger problem now than it used to be. Obesity is not rising at a steady rate, but at a faster and faster rate every year,” said Dr. Garance. “I give this information to mothers because I think it’s important for them to stay informed.”

“Epidemiology is defined as the study of the prevalence (or how common) certain diseases are and how those diseases relate to health.”

In the 1970’s, researchers started to notice that obesity was becoming an increasingly important public health concern. This led epidemiologists to collect data about rates of obesity in the United States. More recent research in epidemiology is starting to explain just how concerned parents should be about increasing rates of obesity.

Importantly for Taylor’s mother, learning about the epidemiology of weight gain and how it might impact Taylor’s health has helped her understand obesity rates that children like Taylor may face.

“I was shocked to learn just how prevalent obesity is,” Ms. Bryson said.

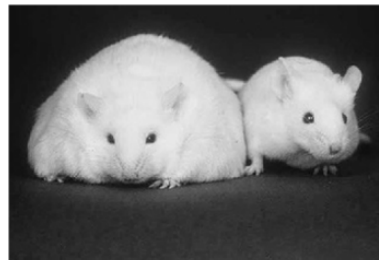
Recent studies have confirmed rising rates of obesity. In a study published last month, researchers at the University of California, Los Angeles monitored self-reported BMI (body mass index, a measure of weight compared to height) among American men and women. Scientists used this data to estimate how many people in the whole country are obese, and how the rate of obesity diagnoses has increased over time.

They first started collecting this information in 1971, when they found that 15.1 percent of the population was obese. Since the 1970s, the rate of obesity in the adult population has more than doubled. By 2004, approximately 67 percent of men and women aged 20 years or older were overweight, 32 percent were obese, and 4.8 percent were extremely obese.

What’s especially concerning is that the rate at which obesity is increasing seems to be going up. The prevalence, or amount of obesity in the population, has increased dramatically at an average annual rate of about 1 percentage point.

“People know that obesity is a public health crisis, but they don’t realize that it’s become more and more of a problem as time passes,” says the study’s principal investigator, Steve Gonzalez, a professor of medicine at the Geffen School of Medicine at UCLA.

Studies done across time show how rates of obesity are rising. Similarly, other studies look into obesity rates for people of different ages, at a single point in time.



Obesity is increasingly common in the United States

This work has happened alongside research in laboratory mice, which shows that obesity has major negative impacts on the body and health. It’s therefore important to see whether today’s children are increasingly likely to become obese to prepare the public health sector to plan for those negative health consequences.

To see whether today’s children are more likely to develop obesity, and to suffer related health problems, recent research looked at the chances of developing obesity for people

today and those born 25 years ago. A paper published in the New England Journal of Medicine this spring investigated rates of obesity among children born in different decades.

The researchers found that 17.1 percent of US children and adolescents were overweight. This is significantly higher than what it was, 13.9 percent, only 25 years ago.

Considering that 32.2 percent of adults are now obese, this means that well over a third of the adult population will be obese in the future. The researchers concluded that there are age effects on obesity, and that today's children are not only already more overweight than their parents were, but are likely to be more overweight in the future.

"The number of people who are obese is going to increase in future years" notes Dr. Jane Sullivan, the study's principal investigator. "These studies show that obesity is a major public health problem."

With rates of obesity increasing within these age groups so steadily, there is concern about educating the public about obesity trends.

In light of this information, Ms. Bryson is turning to Dr. Garance to find out how this will affect Taylor. Like Taylor's mother, parents should discuss obesity rates with their family physician and monitor their child's growth.

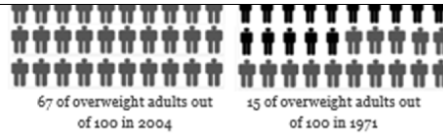
"We now know a lot more about obesity in the United States, but until there's a quick fix, the treatment will be the same," Dr. Garance said. "Kids still need to have better diets and need to exercise more."



A kitchen scale with a black and white checkered base and a white dial showing 120, 10, and kg. A yellow measuring tape is draped across the scale, showing measurements from 14 to 23 inches.

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"We now know a lot more about obesity in the United States, but until there's a quick fix, the treatment will be the same," Dr. Garance said. "Kids still need to have better diets and need to exercise more."



29. Ocean Current Control Female

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Jordan Blank Completes Record-Breaking Mariana Trench Dive

By Sam Limmley
Staff Writer



Researchers present a quick peek at the scientific results from Jordan Blank's dive to the ocean's deepest point.

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MARIANA TRENCHES - Jordan Blank made history Monday for his deep sea dive.

Blank is an avid deep sea diver and scientific explorer. At noon on Monday, local time, Blank's "vertical torpedo" sub broke the surface of the western Pacific, carrying the National Geographic explorer back from the Mariana Trench's Challenger Deep—Earth's deepest, and perhaps most alien, realm.

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"That was a grand moment to welcome him to the club," Walsh said in a telephone interview from the sub-support ship.

Blank travelled to the hadal zone—the ocean's deepest level, below 20,000 feet. The Challenger Deep expedition is the first of its kind. Blank has made 72 deep submersible dives. Of these dives, 51 were in Russian Mir submersibles to depths of up to 16,000 feet. And now, he has done his biggest dive yet.

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Blank also filmed the ocean floor using a 'pilot sphere' with three cameras. The largest is a Red Epic, which captures IMAX-quality, "5K-raw" images and is mounted directly in front of the small viewport on the sphere's hatch. That window—which from the inside is only about the size of a fist and is just below the pilot's knees—was awkward for Blank to look through on his own.

But the window is cone-shaped and is much larger on the side that faces the ocean's pressure. The curvature of the window also corrects for the 30-percent magnification that water causes. With the camera attached and its image projected onto a high-definition screen at eye level, Blank was able to get a wide view of his surroundings through this "virtual viewport."

Throughout the Mariana Trench dive, video cameras were kept whirring, and not just for the benefit of future audiences of planned documentaries.

"There is scientific value in getting stereo images because ... you can determine the scale and distance of objects from stereo pairs that you can't from 2-D images," Blank told National Geographic News before the dive. Blank said, "it's not just the scientific value of the video." The sub's lighting of deep water scenes—mainly by an 8-foot tower of LEDs—is "so, so beautiful."

"It's much better than the images we had from other subs and remotely operated vehicles," said Scott Bartlett, chief scientist for the Deepsea Challenge Project, a partnership between the National Geographic Society and Rolex.

While remotely operated vehicles, or ROVs, are much less expensive than manned subs, there is added benefit to bringing a human down to the deep depths of the sea. Blank was able to turn his head and look around to see the relationships between organisms in a community and to see how they're behaving—to turn off all the lights and just sit there and watch and not frighten the animals, so that they behave normally.

"That is almost impossible to do with an ROV," said Fryer, a marine geologist at the Hawaii Institute of Geophysics & Planetology.

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Before surfacing about 300 miles southwest of Guam, Blank spent hours hovering over Challenger Deep's desert-like seafloor and gliding along its cliff walls, the whole time collecting samples and video.

After a faster-than-expected, roughly 70-minute ascent, Blank's sub, bobbing in the open ocean, was spotted by helicopter and would soon be plucked from the Pacific by a research ship's crane. Earlier, the descent to Challenger Deep had taken 2 hours and 36 minutes.

"Jordan came up in what must have been the best weather conditions we've seen" said Taylor Hand, a NASA astrobiologist and National Geographic emerging explorer.

For his part, Blank seems sure that the Deepsea Challenge will be exploring the depths for a long time to come. In fact, he's so confident in his star vehicle, he started mulling sequels even before today's trench dive.

Phase two might include adding a thin fiber-optic tether to the ship, which "would allow science observers at the surface to see the images in real time," said Mary Cohn, a National Geographic Society explorer-in-residence.

"And phase three might be taking this vehicle and creating a second-generation vehicle."

Deepsea Challenge, then, may be anything but a one-hit wonder. To expedition chief

scientist Bartlett, the Mariana Trench dive could "pave way for new discoveries in science. What we're now seeing is the start of a program, not just one grand expedition.

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Jordan Blank Completes Record-Breaking Mariana Trench Dive

By Sam Limmley
Staff Writer



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