

Week beginning Monday 6th July: Years 5 and 6 Science

Last week we learned about the life and work of Daniel Hale Williams. This week we are going to learn about Marie Maynard Daly. First, please have a look at this information about Marie.

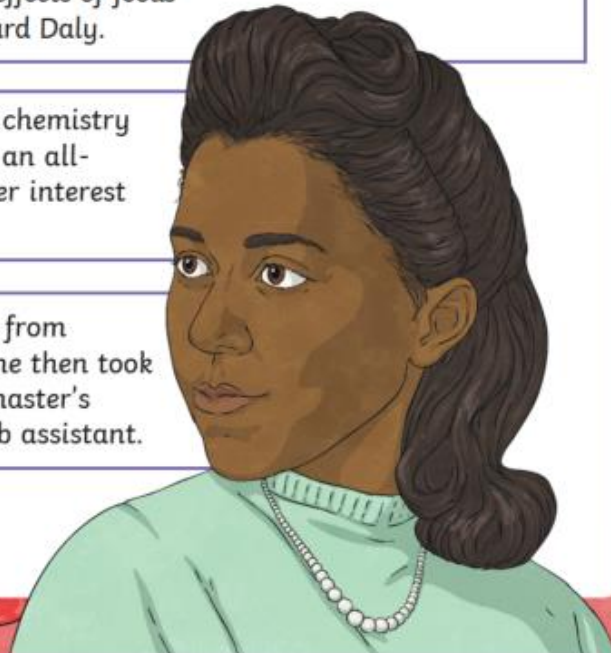


Marie Maynard Daly

Someone who researched the effects of foods on the body was Marie Maynard Daly.

Marie Maynard Daly studied chemistry in New York, after attending an all-girls school that supported her interest in science.

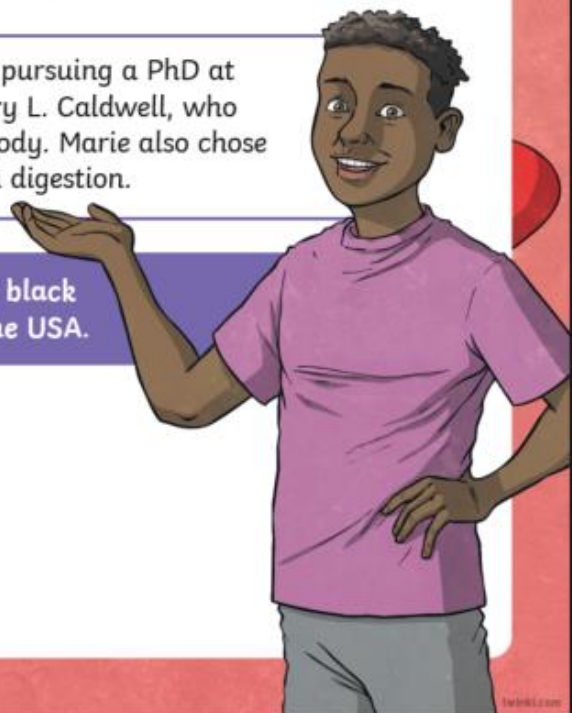
She graduated with a degree from Queens University in 1942. She then took just one more year to get a master's degree while working as a lab assistant.



Marie Maynard Daly

Daly tutored students for a year before pursuing a PhD at Columbia under the direction of Dr Mary L. Caldwell, who was studying digestion in the human body. Marie also chose to study the chemicals affecting human digestion.

Marie Maynard Daly became the first black woman with a PhD in chemistry in the USA.

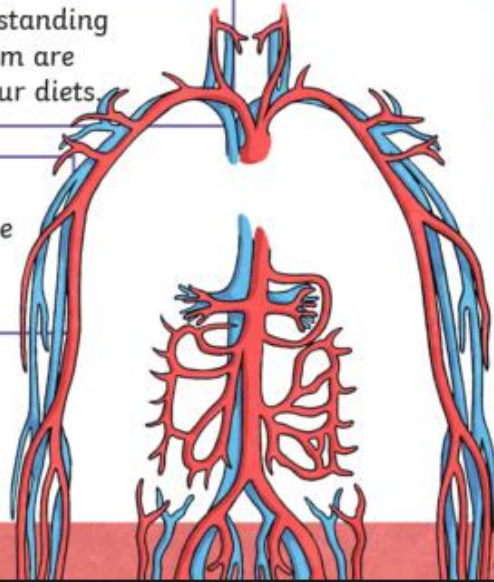


Marie Maynard Daly

◆ Now a doctor, Marie continued to study the chemistry of the human body.

◆ She made huge advances in our understanding of how the heart and circulatory system are affected by sugar and **cholesterol** in our diets.

◆ Her work has demonstrated that too many fatty and sugary foods can make the arteries narrower and can cause heart disease.



Cholesterol

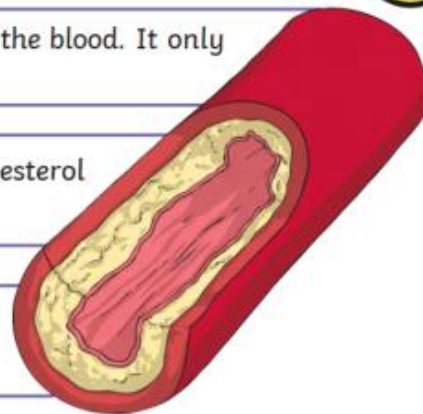


◆ Cholesterol is a type of fat that travels in the blood. It only comes from **animal** products.

◆ Our own livers actually make some cholesterol as some parts of our bodies need it.

◆ We now know that there are two types of cholesterol.

- ◆ One is good for keeping our blood vessels clean.
- ◆ The other does the opposite - it can build up and block blood vessels which can be very dangerous. This was the type Marie Maynard Daly was interested in.



Cholesterol

◆ **Remember**, some cholesterol is good for you and that fatty foods can be enjoyed as an occasional treat as part of a healthy diet.

◆ Food with high levels of cholesterol can often be good in other ways, including as a source of protein.



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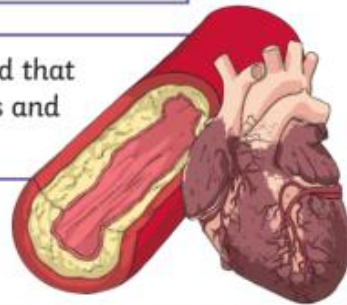
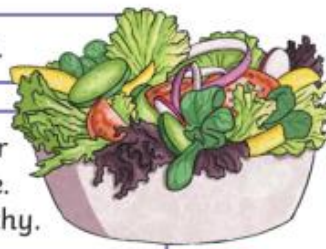
Cholesterol



◆ Foods from plants contain no harmful cholesterol.

◆ Health specialists advise people who need to lower their cholesterol levels to eat less meat and cheese. This should help them to keep their hearts healthy.

◆ It was Marie Maynard Daly's work which proved that too much cholesterol could narrow blood vessels and lead to serious heart problems.



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Overcoming Obstacles



Marie's achievements:

- ◆ 1942 – Marie completes her first degree.
- ◆ 1943 – Marie completes her master's degree.
- ◆ 1947 – Marie completes her PhD.



Significant events in the USA:

- ◆ 1940s – There is a decline in men studying in further education due to the Second World War.

Overcoming Obstacles



Marie's achievements:

- ◆ 1948 – Marie wins a grant from the American Cancer Society to study how the body builds proteins.



Significant events in the USA:

- ◆ 1948 – Segregation ends in the US armed forces (black and white soldiers are allowed to fight and train together).

Overcoming Obstacles



Marie's achievements:

- ◆ 1955 – Marie begins researching heart attacks.



Significant events in the USA:

- ◆ 1954 – A law is passed to end segregation in schools (although many schools remain segregated).

Overcoming Obstacles



Marie's achievements:

- ◆ 1960 – Marie begins teaching biochemistry and studying how age affects the heart.




Significant events in the USA:

- ◆ 1955 – Rosa Parks refuses to give up her seat on the bus - commonly thought of as the start of the Civil Rights Movement.
- ◆ 1957 – 60 black leaders and **pastors**, including Martin Luther King, meet to coordinate protests against discrimination and segregation.

Activities

Now try out your Science skills with these activities. Have a go at **activity 1**. Please record the answers in your book.



Diet and the Heart

To explain how diet affects the way the body functions.

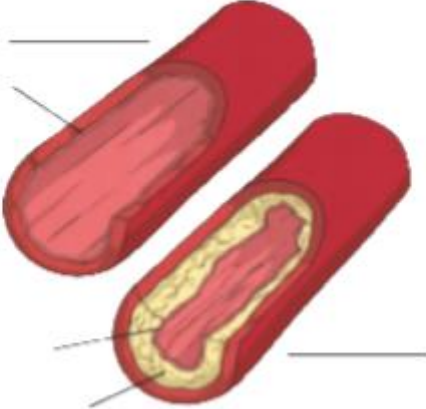
Complete the paragraph about diet and the effect of cholesterol on the heart and circulation using what you have learnt so far.

Marie Maynard Daly studied how _____ and _____ affect the human body, particularly the heart and _____ system. She discovered that the arteries in the body can _____ from eating too many sugary or fatty foods.

Cholesterol is a type of _____ that can travel in the blood. Not all cholesterol is bad; in fact, some parts of our bodies need it to work. The good type is good for keeping blood vessels _____, but the bad type builds up in our blood vessels and can _____ them.

Cholesterol is only found in food which comes from _____ sources.

Use what you have learned about cholesterol to label this diagram.



Now try **activity 2**. Can you draw and complete this activity sheet in your book?

High or Low?

To explain how diet affects the way the body functions.


Cut out the food types at the bottom of this sheet and try to order them from lowest to highest amounts of cholesterol below.


Lowest

Highest

Which foods do your group think are the highest in cholesterol?

Why?





planit

Science | Year 6 | Science: and Invention (Marie Curie) | Lesson 3

semi-skimmed milk	salmon	vegetable oil	baked potato	apples
eggs	chicken breast	celery	cheddar cheese	