

# How to make the perfect burger: Oxford food scientist claims to have answer

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A leading food scientist claims to have created the perfect burger - and says that its smell and feel are more important than the taste.

The best burgers are 7cm tall, 5cm wide and boast nine layers, according to Oxford University chef and food perception expert Charles Michel.



Leading food scientist Charles Michel, chef-in-residence at Oxford University's Crossmodal Research Laboratory Photo: Tim Stewart News

He said that eating a burger is a "multi-sensory experience" and that it should never be served on a plate or with cutlery to maximise enjoyment.

His scientific recipe for success is that 30 per cent of a burger's appeal lies in its smell; 25 per cent in its feel; and 15 per cent in each of how it looks and the sound made eating it.

How the burger actually tastes in the mouth accounts for only the remaining 15 per cent, he claimed.

Mr Michel, who has worked in Michelin-starred restaurants, is chef-in-residence at the university's Crossmodal Research Laboratory.

He is an expert in gastrophysics, a growing field of science analysing how we interact with our food. The nine layers from top to bottom of Mr Michel's perfect burger are:

1. Warmed seeded burger bread sprayed with sesame seed oil
2. Chipotle sauce
3. Crunchy lettuce and sliced gherkin
4. Juicy, vine ripened tomato
5. Crunchy slices of serrano ham and deep fried onion
6. Slices of melted, Camembert cheese
7. Patty of Wagyu beef seasoned with BBQ sauce, salt, pepper and finely chopped onion
8. Ketchup sauce
9. Lower bread splashed with soy sauce

Mr Michel says that warmed burger bread combines with a Wagyu beef patty for the ideal aroma that "directly hits nostrils".

The 'sensory formula' for the perfect hamburger

The 'sensory formula' for the perfect hamburger Photo: STIAN ALEXANDER

The aroma of fresh, high-quality ingredients plus fat in the beef optimise expectation of a delicious treat to come. The burger should always be held in wrapping rather than on a plate with cutlery, he said.

The feeling of a soft, warm bun in the hand improves perception of taste in the mouth and wrapping maintains structure, moisture and heat until the last bite.

Mr Michel said that we eat with our eyes and our ears just as much as our mouths. The initial look of a juicy burger in attractive surroundings can boost enjoyment of the meal, he said.

An infographic for the 'perfect burger'

The 'perfect burger' Photo: Tim Stewart News

The crisp sound of wrapping, sizzling of the patty, crunchiness of bacon, ham, lettuce, onion and gherkin and good background music all enhance the eating experience too.

'We actually 'taste' food with all of our senses and it is scientifically inaccurate to think just about the taste of food in the mouth when discussing deliciousness...'

- chef Charles Michel

According to Mr Michel, the perfect burger's texture on the tongue is 30 per cent umami, a Japanese word that describes a meaty or savoury taste; 25 per cent salty; 20 per cent sweet; 15 per cent sour; and five per cent bitter.

And to hit taste buds with all nine layers at once, the burger should be mouth-sized - 5cm wide and 7cm tall with the extra 2cm height made up of fluffy bread that can be squeezed with both hands.

Mr Michel also said that giving a burger a colourful name like a "Big Mac" enhances enjoyment by building expectation of what is to come.

Explaining his research, Mr Michel stressed that taste is only one component of the perfect burger.

He said: "Science has shown that deliciousness is a perception created by our brains with stimulation coming from all the senses and not only a sensation happening in our mouth.

"We actually 'taste' food with all of our senses and it is scientifically inaccurate to think just about the taste of food in the mouth when discussing deliciousness.

"A growing body of research is also showing just how much we 'eat with our ears' and sound is often the forgotten flavour sense. Imagine how disappointing a burger would be without hearing the crunch of the crispy bacon, lettuce or gherkin.

"Focusing on the sizzle of the meat, the sound made by food in your mouth as well as listening to your favourite song whilst eating a burger can really make it more enjoyable."

Mr Michel's work was commissioned by supermarket Asda to celebrate National Burger Day on Thursday.

Asda's beef buyer Neil Moorcroft said: "Burgers have come a long way from a humble beef patty in a bun to a great British favourite and gastronomic dish.

"Wagyu burgers are full of flavour, texture and have a decent amount of fat to carry burger smells to our nostrils. It's important to us to support food innovation and offer customers something new.

"We want people to listen to the sounds and appreciate all of their senses when biting into their perfect burgers this National Burger Day."