

Drew & Cole's Complete Guide to Cooking *Sous Vide*

Introduction

Have you ever seen chefs on TV programs cook food “in a bag” at a constant water temperature? Have you ever wondered what they were doing and why? Well this is called “sous vide” cooking. It has nothing to do with old fashioned “boil in a bag” ready meals and everything to do with getting the most amazing, delicious results from your cooking. And it’s not just for professionals, it’s all the rage for home cooks, too!

Sous vide literally means ‘under vacuum’ in French and is a technique that has been used in professional kitchens for a number of years. Pronounced “soo veed” it’s how top chefs achieve that “melt in your mouth” texture perfectly, time after time.

In recent years sous vide has come to domestic kitchens, mostly via expensive and unwieldy equipment. But with the all-new CleverChef Pro, anyone can sous vide with ease!



A sous vide set up in a typical professional kitchen

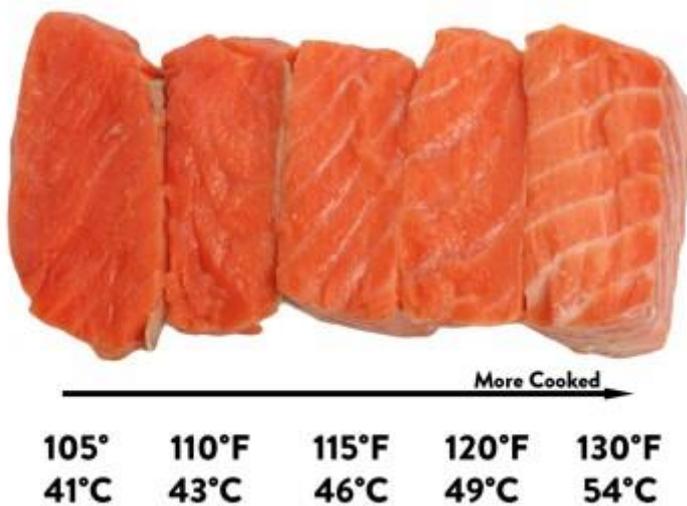
Why Sous Vide?

So why is sous vide so popular with chefs and increasingly in the domestic kitchen? Very simply: control and consistency. To cook a steak to medium rare you need to achieve a 55°C internal temperature which is difficult if done in a frying pan because you are cooking at a far higher temperature and the cooking process continues after you remove the steak from the pan. So there is a considerable amount of guesswork involved! However, with sous vide if you set the water temperature to 55°C then it’s literally impossible to overcook the steak because the steak won’t get hotter than the water temperature. Leave it in the water for long enough and the whole cut of meat reaches the target temperature. This means you can achieve the perfect steak with far greater consistency - it is almost foolproof. Better still

you don't have to sit and watch your food. Because it cannot overcook you don't have to constantly monitor your food so it's far less stressful.

Sous vide is also a really healthy way to cook. With vegetables you are able to retain far more nutrients than if you boiled them - they remain in the bag rather than leaching out into the cooking water - and because cooking temperatures are lower than boiling or steaming, fewer nutrients are destroyed by the cooking process. With meat, you are able to cook with a fraction of the usual oil or butter. And by cooking like this, you retain the natural flavours leading to a tastier end result.

Sous vide also lets you achieve textures you never thought possible - chicken is more delicate than ever and salmon is to die for - like cooked sashimi.



So why sous vide? Perfect results every time, healthier food, better taste, and less stress in the kitchen. What's not to love?

The 2 Methods: Vacuum Bag and Displacement

There are 2 methods that you can use to cook sous vide:

For experienced or frequent sous vide users we would recommend that you purchase a *vacuum sealer and bags*. Nowadays these are quite cheap and there are hundreds of models to choose from.



A vacuum sealer with steak in a vacuum bag

However, if you are new to sous vide or are only going to do this occasionally then consider the *displacement method*. All you need is a zip-lock food bag and your ingredients. Here is our guide on how to use this method so that your food remains fully submerged and does not float to the surface.

1. Fill the CleverChef Pro inner pot with cold water up to the MAX 2/3 line.
2. Put your ingredients in a zip lock bag starting with the main ingredient and then the oil / aromatics / marinades if using.
3. Close the zip almost all the way (about 80-90%), leaving about 2cm open through which the air can escape.
4. Gently lower the bag into the CleverChef Pro inner pot and as you lower it , the air should be forced out by the water pressure - this is displacement.
5. Just before the bag goes fully under water, close the zip fully.
6. Use a rack, a small weight or a clip to make sure the bag does not move around.
7. Then start the appropriate sous vide cooking program according to your recipe.



Displacement method with a sandwich bag

Cooking Times & Temperatures

Some cuts of meat respond better than others to sous vide. Chicken wings? Far better to cook these using the SAUTE -> CRISPY function. However, other cuts will give you results you never dreamed possible.

There are 2 main things to consider when using sous vide: cooking temperature and cooking time:

Temperature: this will control the *doneness* of what you choose to cook. Just a few degrees can make a huge difference: at 60°C steak will still be juicy and pink but by 70°C this will be brown and much drier.

Time: this will determine the *tenderness*. All cuts need sufficient time to reach the target temperature but tougher cuts of meat often need much longer (e.g. pork belly) cooking to start breaking down the proteins and muscle fibres to give the desired melting texture.

You also need to think about the *thickness* of your food. The cooking times we suggest below are based on a “standard” size cut (up to 3 cm for a steak) but any thicker and you will definitely need to adjust the minimum cooking time upwards.

The type of cut you are using will also determine your time and temperature. Tougher cuts need longer not just because they are thicker but also because we want the texture of the protein to change so that we get a really soft texture - this takes time. With the more tender cuts we want this to be soft but not mushy - to retain a little “bite”.

Searing: we will look at this in more detail in the food safety section but we recommend that from both a hygiene and a visual appeal point of view you sear most of your foods for 1 or 2 minutes once they have finished in the sous vide bath.

Food Safety

Food safety is always important but because we are cooking at temperatures lower than normal it's especially important with sous vide. The great news is that you don't have to cook at extremely high temperatures to kill bacteria but different foods have different considerations. For example bacteria only live on the outside of beef and lamb so as long as you sear the outside in a hot pan the internal temperature can be whatever you want.

However, with other meats e.g. chicken or pork the bacteria are present throughout the meat so the whole cut needs to reach the safe target temperature, for long enough at the level that harmful bacteria are killed. This is why you cannot safely serve these meats under-done.

The 'danger zone,' where bacteria multiply fastest, is considered to be between 8°C and 60°C. Below 8°C bacterial growth slows down and above 60°C bacteria start to die. Time and temperature are both important as proteins need to be heated up for long enough to be totally broken down.

The standard advice is to cook until it reaches 70°C and has remained at that temperature for 2 mins. However, there are other time / temperature combinations that are valid and this is particularly important for sous vide as it enables us to achieve textures that a lower internal temperature allows, and given this is a long and slow cooking method this is also safe:

- 60°C for 45 minutes
- 65°C for 10 minutes
- 70°C for 2 minutes
- 75°C for 30 seconds
- 80°C for 6 seconds

However, this means that unlike beef or lamb, pork or poultry cannot safely have an internal temperature below 60°C. We recommend that chicken is never cooked below 62°C (though you may want to cook it as high as 71°C) and pork, never below 71°C.

It is important to note that *mince* is not considered a whole cut of beef as it will have been exposed to the air and any bacteria on the surface of the meat gets spread throughout the mince. For this reason burgers should not be served pink in the middle as there may be bacteria present which has not been heated to a high enough temperature. This applies to ALL burgers even those made from expensive or high quality beef. That said sous vide is probably not the best method for cooking burgers which, like chicken wings, work better fried or on a BBQ.

Cooking Guide

This is a guide to cooking times and temperatures for common foods. If your cuts are thicker then you may need to increase the cooking time and it is strongly recommended you test the internal temperature with a kitchen thermometer / probe especially if you are using larger cuts of meat & fish.

BEEF & LAMB

	Approx Thickness	Cooking Temperature	Cooking Time (Min - Max)
Tender Cuts e.g. rib-eye steak, fillet, rump	1-2cm	55°C - Medium-Rare 60°C - Medium 65°C - Medium-Well Done	1h - 4h
Tougher Cuts e.g. short ribs, brisket, flank / skirt steak	2-4cm	55°C - Medium-Rare 60°C - Medium 65°C - Medium-Well Done	24h - 72h

If you are cooking below 62°C then you will need to sear your meat in a hot pan afterwards to kill any bacteria on the outside of the meat which won't have been killed below 62°C. This can also be done in CleverChef Pro, simply empty out the water, dry the pot and use the Saute function.

Even if you like your steak very rare, we recommend that 55°C is the lowest temperature you cook your steak. This is because the whole steak will be this temperature and level of doneness not just the middle. A whole steak at 50°C, even when quickly seared on the outside, does not have a cooked texture and may be a little chewy. However, feel free to experiment at a range of temperatures to find your favourite way of cooking sous vide steak - everyone is different!



Juicy sous vide steak cooked medium rare

PORK

	Approx Thickness	Cooking Temperature	Cooking Time (Min - Max)
Tender Cuts e.g. tenderloin or smaller chops	1-2cm	71°C (see below)	1.5h - 4h
Thicker or Tougher Cuts e.g. baby back ribs, belly	2-4cm	71°C (see below)	12h - 48h

There is a vogue for cooking pork pink in the middle but the sous vide pork settings for the CleverChef Pro reflect current UKFSA guidelines that pork should reach an internal temperature of 71°C for 2 mins.



Sous vide pork chops

CHICKEN

	Approx	Cooking	Cooking
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	Thickness	Temperature	Time (Min - Max)
Breast (White Meat)	2-3 cm	62°C - Juicy & moist 69°C - Firm	1h 30 - 4h 1h - 4h
Dark Meat (Thighs, Legs, Drumstick)	2-3cm	71°C - Juicy & moist 71°C - Fall-of-the-bone	1h 30 - 4h 4h - 8h

Like pork, chicken needs to be cooked all the way through and cannot be served pink. If you are nervous about the cooking temperature of chicken then cook everything at 71°C minimum but for white breast meat only cooking for a minimum of 1 hour 30 (for max 3cm thick breast) at 62°C will kill the bacteria associated with chicken. In fact chicken is pasteurised when cooked to 60°C and held there for 30 mins.

FISH

	Approx Thickness	Cooking Temperature	Cooking Time
Oily fish e.g. salmon, tuna, mackerel, trout	2-3cm	43°C - Rare 50°C - Medium-Rare 60°C - Medium	20-30mins
Lean Fish e.g. cod,	2-3cm	47-50°C Medium rare	20-30mins
Shellfish e.g. prawns, lobster	1-2cm	52°C	20-30mins

There are fewer safety concerns with fish than with meat (think sushi / sashimi) so you can experiment more at lower temperatures. The guide above gives what we think are the best options. With oily fish this is great cooked at a range of temperatures, depending on taste but with lean fish it won't be sufficiently cooked below 47°C but much higher than 50°C and it dries out quickly so the recommended range is smaller. Note that at these temperatures you will not pasteurise the food so if this is a requirement for any reason (e.g. pregnancy) then you will need to cook at 60°C for at least 90 mins.

VEGETABLES

	Approx Thickness	Cooking Temperature	Cooking Time (Min - Max)
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Green / Tender Vegetables e.g. peas, broccoli, asparagus	1-2cm	85°C	30m - 2h
Root Vegetables e.g. carrot, beetroot, potato	1-2cm	85°C	1h - 4h

We recommend cutting bigger vegetables into bite sized pieces for quicker, even cooking. Note the below is a guide. Individual vegetables may benefit from a 1-2°C tweak in temperature either way - the CCP has specific programs for certain vegetables.



Sous vide carrots

For sous vide recipes and inspiration visit <https://drewandcole.com/recipes/> or download the free Drew&Cole App.