



**Presenting author**  
 Margit D. Aaslyng  
 Phone: +45 72 20 26 84  
 Email: mdag@teknologisk.dk



**DANISH MEAT  
 RESEARCH INSTITUTE**

# Barbecue habits and the effect on health

Margit D. Aaslyng and Lene Meinert



## Introduction

Using consumer studies, it is possible to gain a unique insight into consumer barbecue habits and a realistic estimate of the intake of carcinogenic compounds (heterocyclic amines (HCA) and polycyclic aromatic hydrocarbons (PAH)).

## Experimental

### Friday

Pork chop n=50    Chicken filet n=50    Pork chop n=50    Beef steak n=50



### Weekend



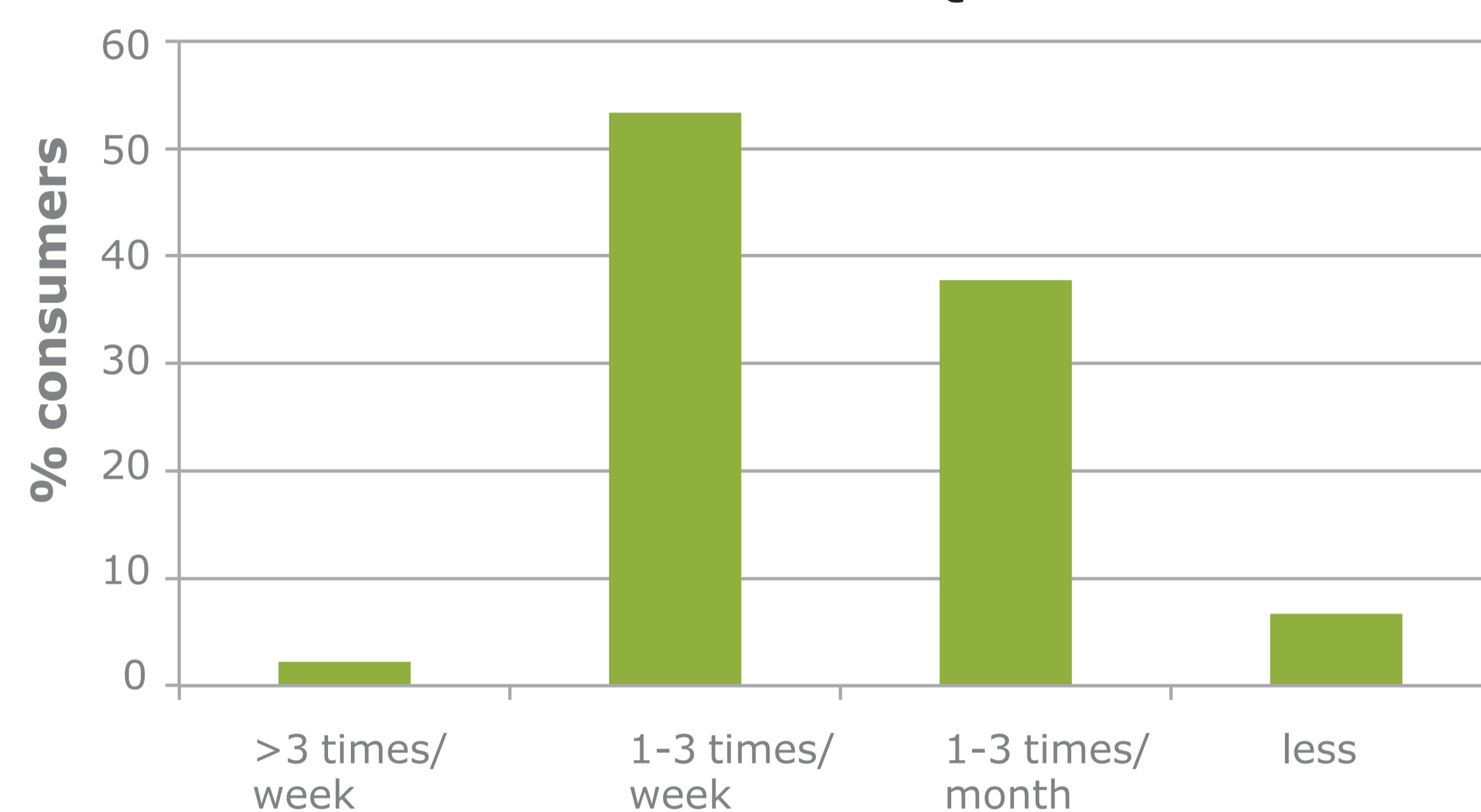
### Monday



All consumers filled in a questionnaire. The samples returned were analysed for HCA (all samples) and PAH (10 samples per species).

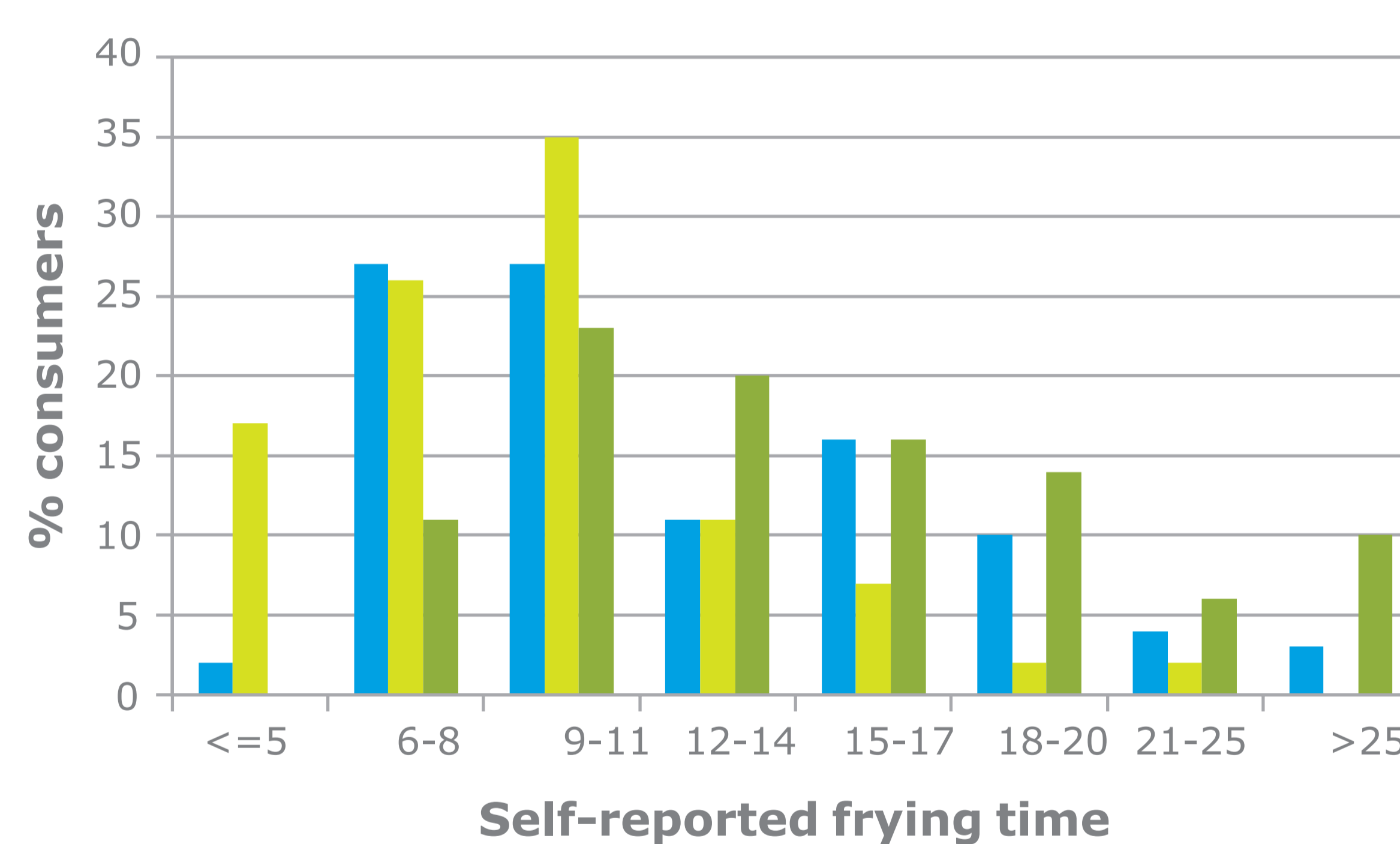
## Results

### BARBECUE FREQUENCY



- Almost half of the consumers answered that they barbecued 1 - 3 times weekly during the summer.
- 17 % of the consumers also barbecued during the winter.
- Approximately 80 % of the persons, who did the grilling, were males.
- The age was between 13 and 62 years with the main part between 42 and 57 years.

### FRYING TIME



Beef is in general fried for the shortest time, pork medium time and chicken for the longest time. This is in accordance with the estimated core temperature, which was lowest for beef. However, the surface colour of beef was darker compared with pork and chicken.

### Accompaniment

The accompaniment to the meat differed depending on the species. Pork and chicken were mainly served with potatoes and salad followed by vegetables, especially grilled corn. Beef was also served with potatoes and salad, but less often with vegetables.

Half of the consumers used marinades for the pork chops. The marinades were mainly oil-based with BBQ/grill spices, chilli or garlic. The spices used for the rest of the chops were salt and pepper (approx. 50 %), BBQ/grill spices (18 %), garlic (15 %) or other spices.

The beef steaks were less often marinated - only by 28 % of the consumers and more than half of these consumers used BBQ/grill marinades. 66 % of the rest of the consumers used only salt and pepper.

The chicken filets were only marinated by 30 % of the consumers. Also for chicken, BBQ/

grill marinade was the most popular. The spices used for chicken were more varied: green herbs, Indian spices, curry and mustard were used by almost half of the consumers.

### HCA and PAH

In general, the highest amount of HCA was found in chicken followed by pork while the least amount was formed in beef. PAH was mainly present in beef followed by pork with the least amount in chicken. The content of HCA was largest in the darkest samples, but not all dark samples were high in HCA content.

## Conclusion

Danish consumers often barbecue 1-3 times a week. The frying time is long, especially for pork chops and chicken filets. Still a low intake of HCA and PAH can be achieved, if the black crust is avoided.

The barbecuing habits are very conservative.

Beef is generally cooked with salt and pepper, chicken with a variety of spices while pork is more often marinated.

Aaslyng et al (2012) Meat Science, online 10th August