

# Infant milk formulas: effect of heat treatments on the protein physicochemical properties and the nutritional quality

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# Infant milk formulas: Effect of heat treatment on the protein physicochemical properties and the nutritional quality

STLOpen Days  
19-21 March 2019

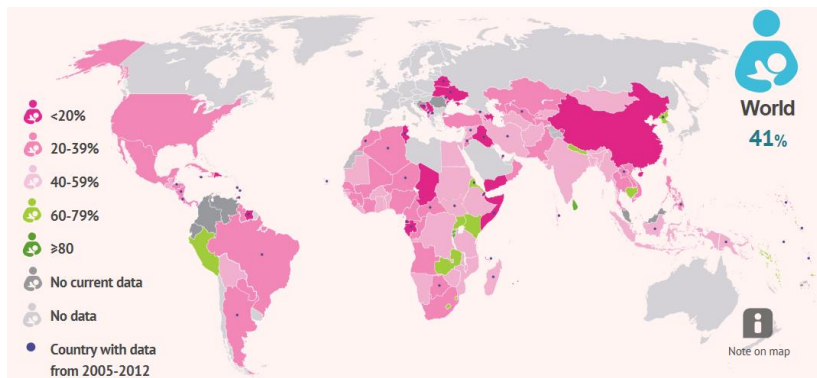


Amira Halabi – ISF/BN Teams

Interaction-Structure-Functionalities / Bioactivity and nutrition



# Socio-economic and scientific contexts



## Percentage of infants 0–5 months of age exclusively breastfed

UNICEF global databases, 2018

### Needs

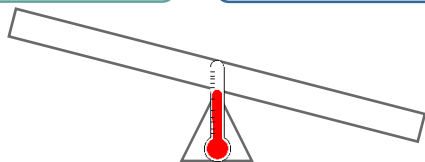
Microbiological safety

Extend shelf-life

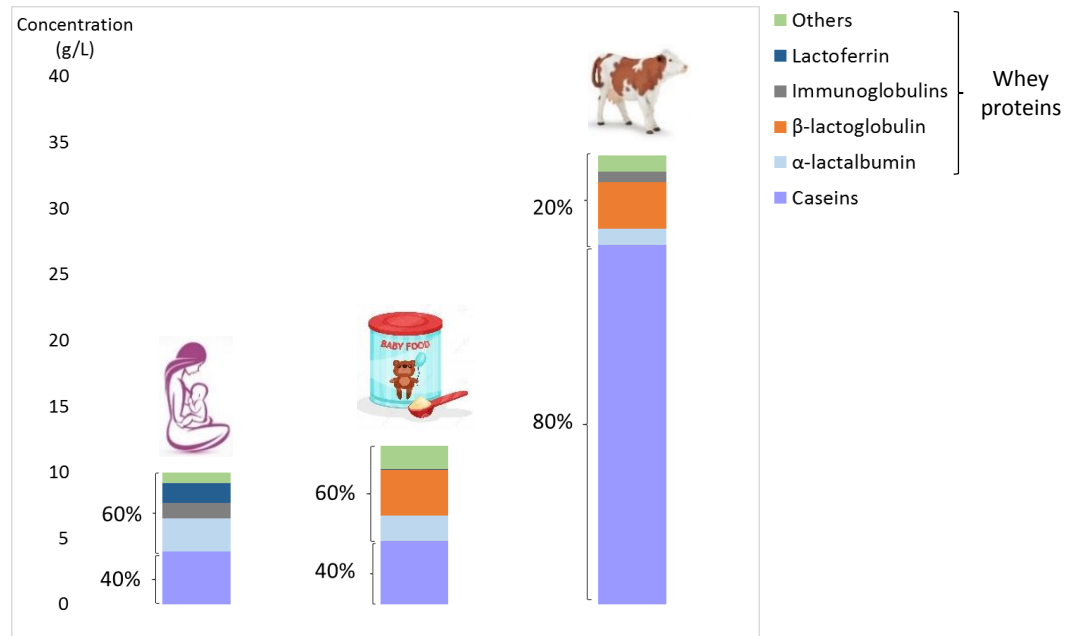
### Consequences

Protein structural modifications

Digestibility ?



## Heat treatments of infant milk formulas

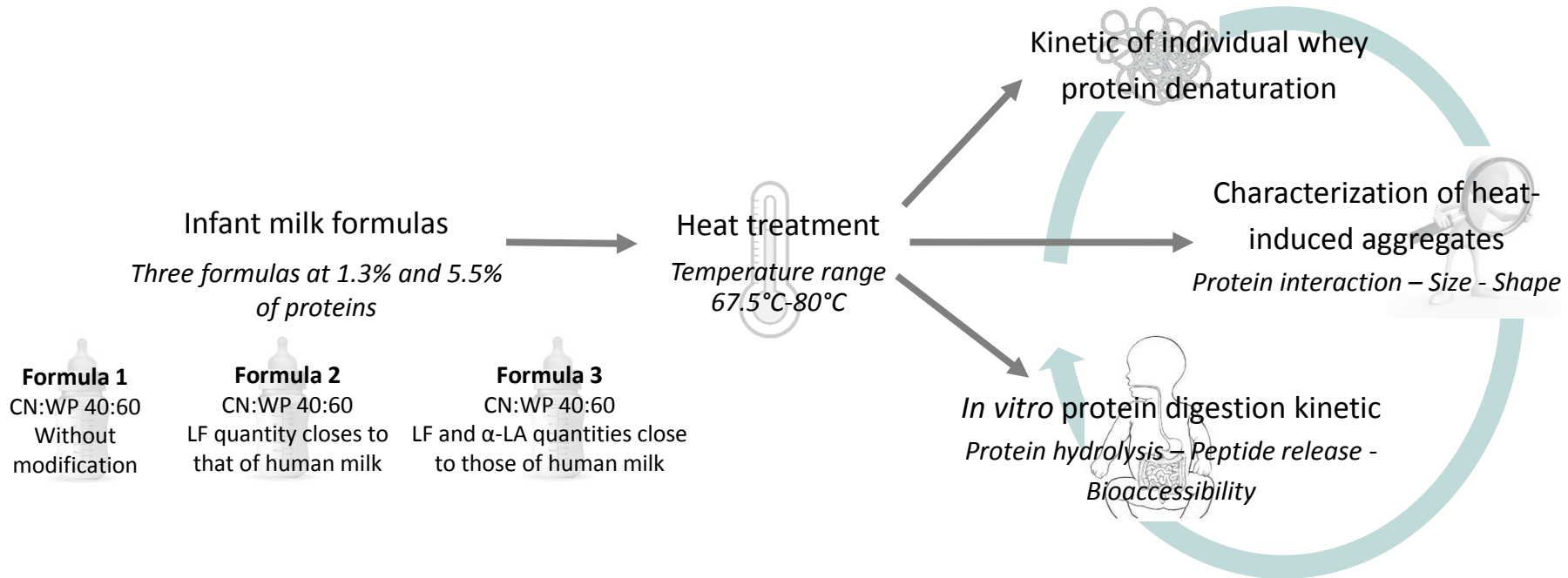


Adapted from Chatterton et al. 2013

## Protein composition of human milk, commercial infant milk formulas and bovine milk

# Strategy

What are the impacts of heat treatment on the structure and digestion kinetic of proteins of infant milk formulas mimicking the protein profile of human milk ?



CN: caseins  
WP: whey proteins  
LF: lactoferrin  
 $\alpha$ -LA:  $\alpha$ -lactalbumin

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