Niamh at 9 months

Niamh at 3 years

Niamh at 5 years

Early Introduction of Cow's Milk in Infants in Ireland

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Presentation Outline

- **Rationale for Study**
- **Aims & Objectives**
- **Subjects & Methods**
- **Results**
- **Strengths, Limitations & Areas for Future Research**
- **Conclusion**
- **Questions**

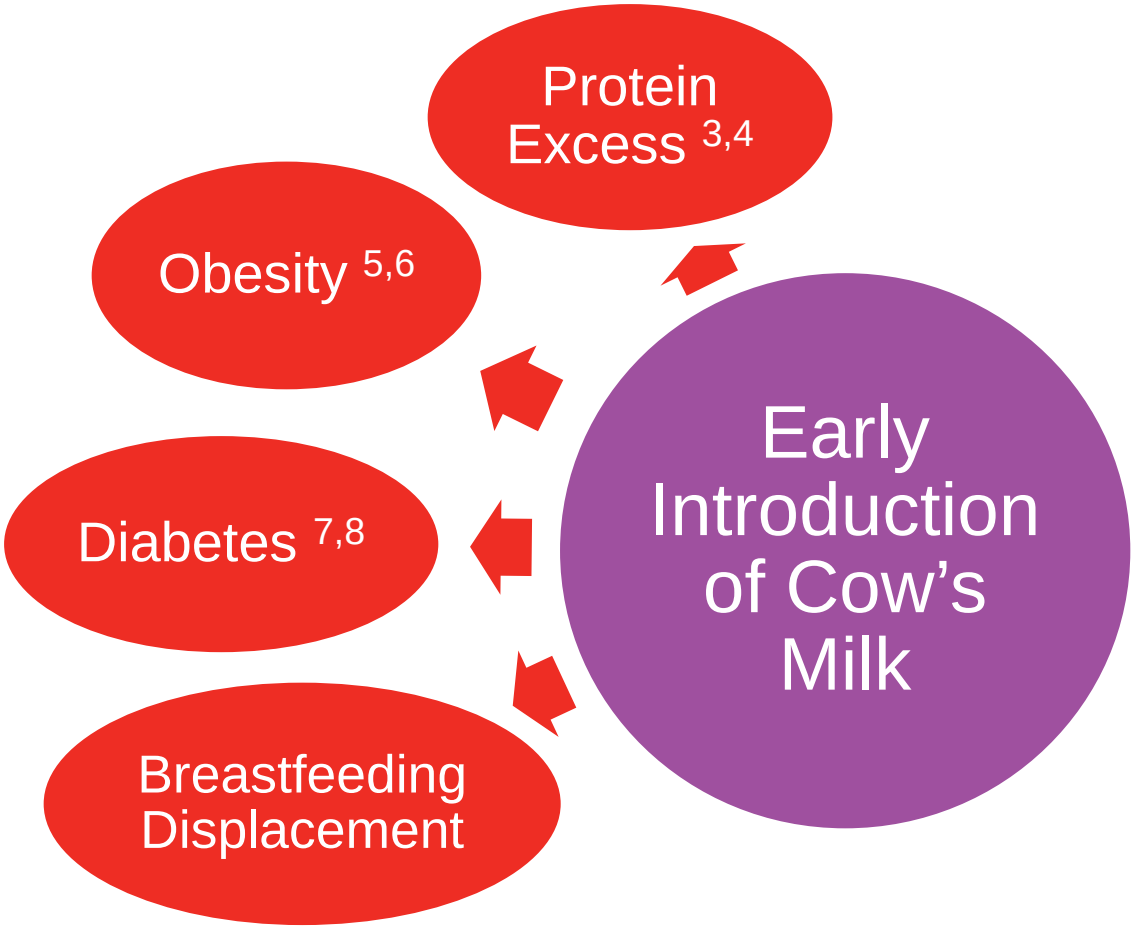
Rationale for Study

The first 1,000 days are widely recognised as a key opportunity to mould health [1,2]

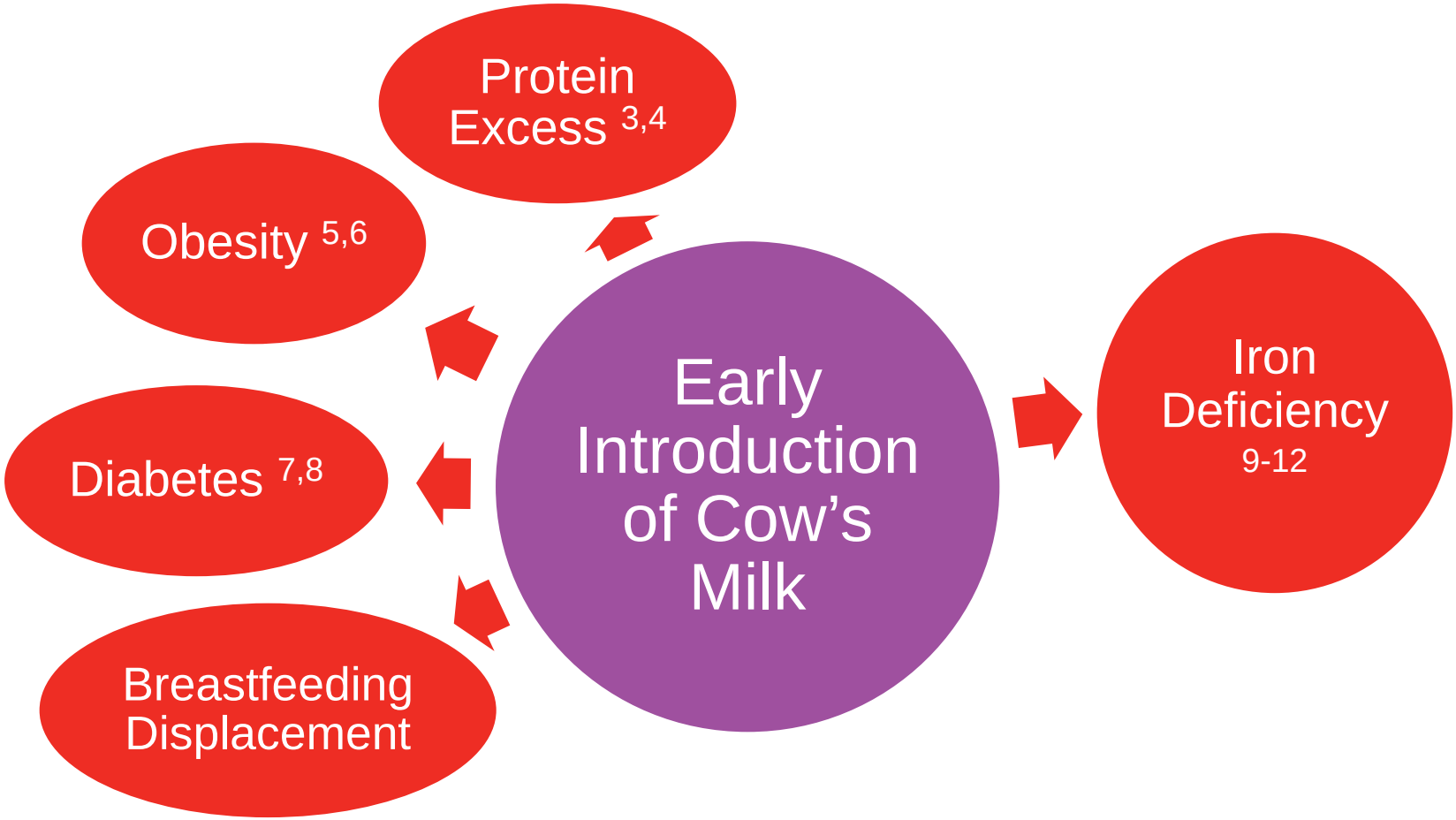
Periods of programming:

- 38-40 weeks in utero
- Milk-feeding period
- Period of complementary feeding

Rationale for Study



Rationale for Study



Rationale for Study

Cow's milk should not be consumed before 6 months of age[13].

Cow's milk should not be used as a main milk drink before 12 months of age[13].

The use of small volumes in the preparation of weaning foods is permissible from 6 months of age[13].

Rationale for Study

Poor compliance with guidelines reported[14,15].

Variance seen in consumption rates in Ireland[16,17].

Aims and Objectives

- **Establish the prevalence of introduction of cow's milk in Ireland at two time points:**
  - Before 6 months
  - By 9 months
- **Identify significant predictors of early introduction.**
- **Investigate the association between rapid growth and cow's milk introduction in infancy.**

Subjects

Growing Up in Ireland:
Aims to understand and improve children's development

- Child cohort and **Infant** Cohort
- **11,134** infants, aged **9 months**
- Random sample from the Child Benefit Register
- 70.2% response rate
- Parents interviewed in 2008/09
- Anthropometric measurements taken

Methods

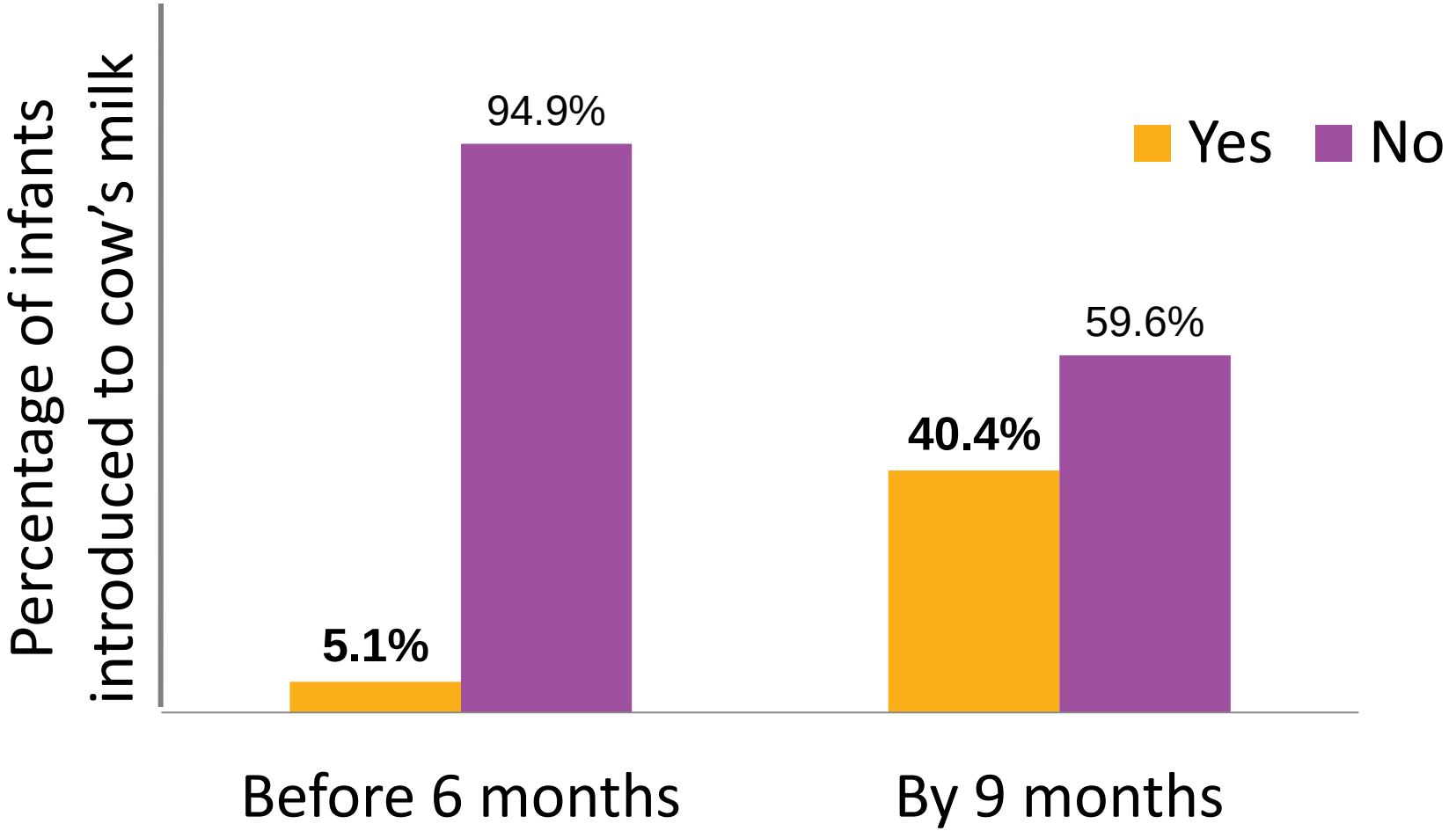
- **Preparation of the database:**
  - Identification of independent and dependant variables
  - Recoding and categorisation of variables
- **Statistical Analysis**
  - Descriptive analysis
  - Univariate analysis
  - Multivariate analysis- Binary logistic regression
    - Dealing with missing data
  - Analysis of growth trajectories

Results

Sample Characteristics

Primary Caregiver	
Female	99.6%
Mean age	31.5 years (± 5.4)
Married & living with spouse	70.4%
Irish	83.6%
Initiated breastfeeding	56%
Infant	
Mean birth weight	3.5kg (± 0.54)
Born at >37 weeks	93.4%
Singleton	96.5%

Prevalence


Percentage of infants introduced to cow's milk
Yes
No
94.9%
5.1%
59.6%
40.4%
Before 6 months
By 9 months

Determinants at 6mth

Maternal characteristics

- Young age (*P*=0.014)
- Low education (*P*=0.027)

Infant Feeding Practices

- Weaning before 2 months (*P*<0.001)
- Breastfeeding discontinuation between 4 and 6 months (*P*=0.009)

Determinants at 6mth

Household characteristics

- Social welfare payments contributing strongly to income (*P*=0.029)
- One parent family, with ≥2 children (*P*=0.007)
- Rural residence (*P*<0.001)
- Possession of GP Visit Card (*P*<0.001)

Determinants at 9mth

Maternal characteristics

- Young age (*P*=0.001)
- Multipara (*P*=0.003)
- Increasing time in Ireland (*P*<0.001)
- Ethnicity (*P*=0.001)
- Not taking folic acid prior to pregnancy (*P*=0.005)

Determinants at 9mth

Household characteristics

- Social welfare payments contributing strongly to income ($P<0.001$)

Infant characteristics

- Health at birth ($P=0.031$)
- Gestational age at birth ($P<0.001$)

Maternal Age

Maternal Age	Before 6 months		By 9 months	
	P	OR	*P*	OR
< 20 years	0.020	2.071	<0.001	2.059
≥ 40 years		1.0*		1.0*

1.0* = Reference group *P*= *P* value OR= Odds ratio

Education

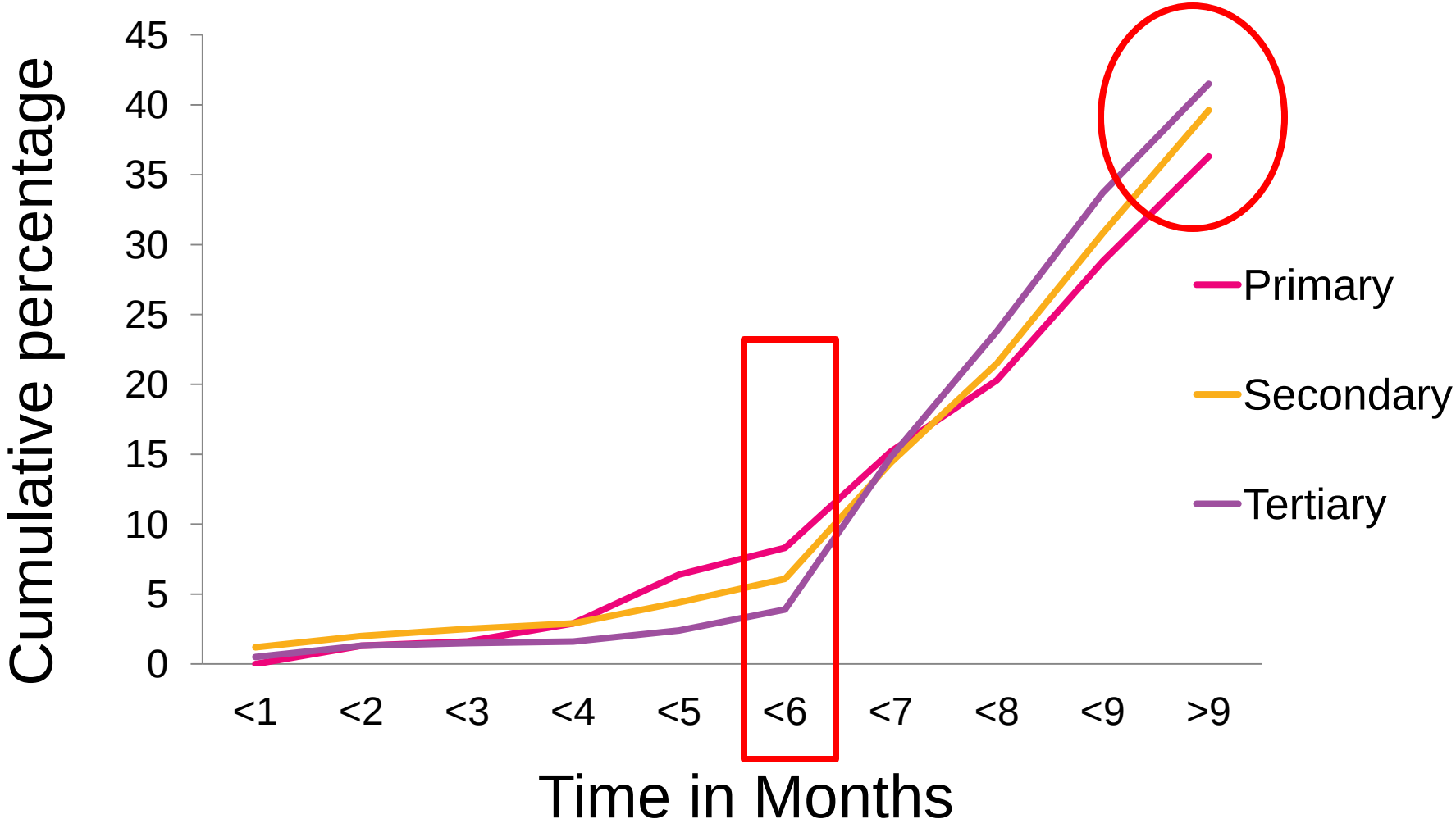
Maternal Education	Before 6 months		By 9 months	
	P	OR	*P*	OR
No formal/ Primary	0.011	1.780		
Secondary			0.004	0.868
Tertiary		1.0*		1.0*

1.0* = Reference group

P= *P* value

OR= Odds ratio

Education & Timing



Culture

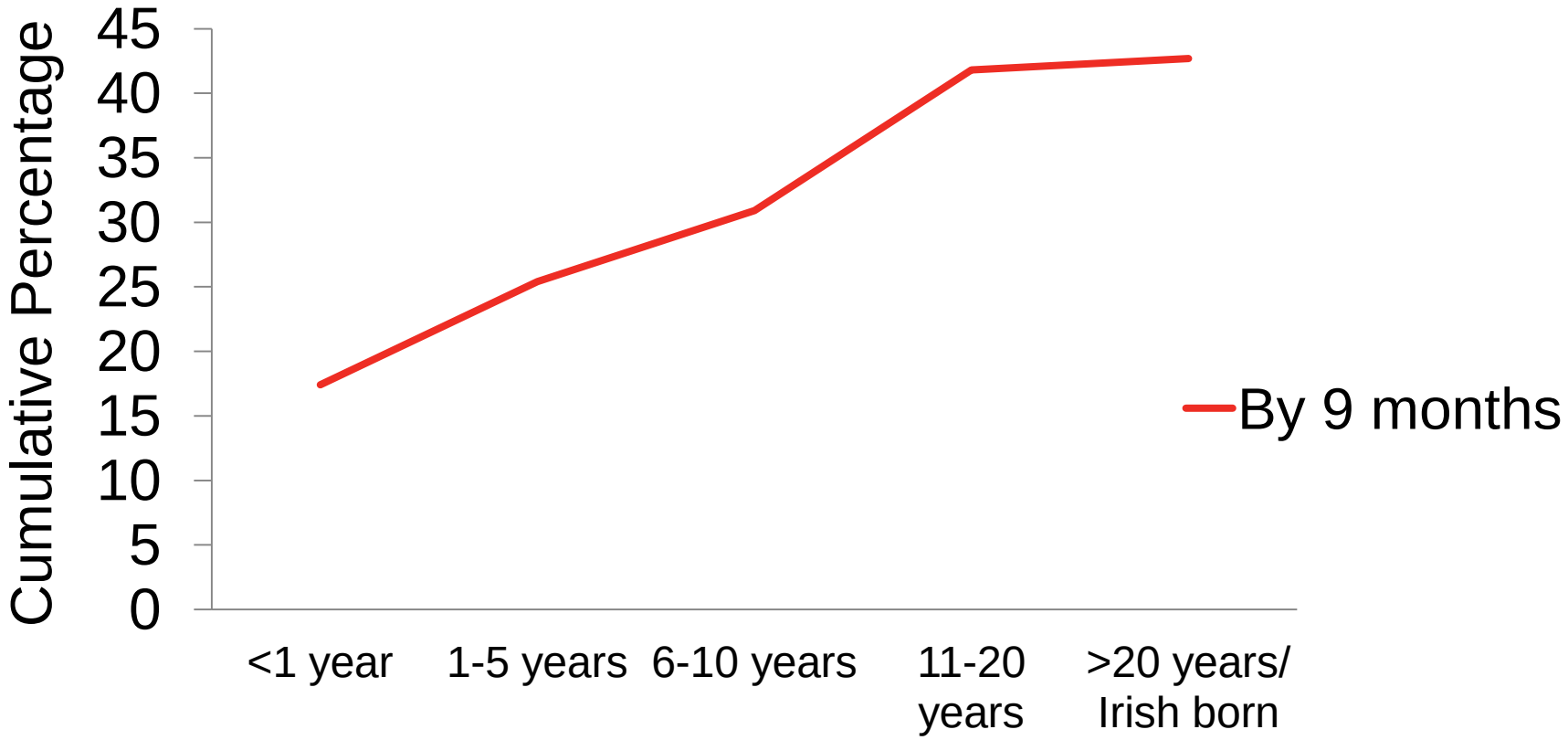
Time in Ireland	By 9 months	
	P	OR
<1 year	0.049	0.266
1-5 years	0.001	0.617
>20 years/ Born in Ireland		1.0*

1.0* = Reference group

P= *P* value

OR= Odds ratio

Culture & Timing

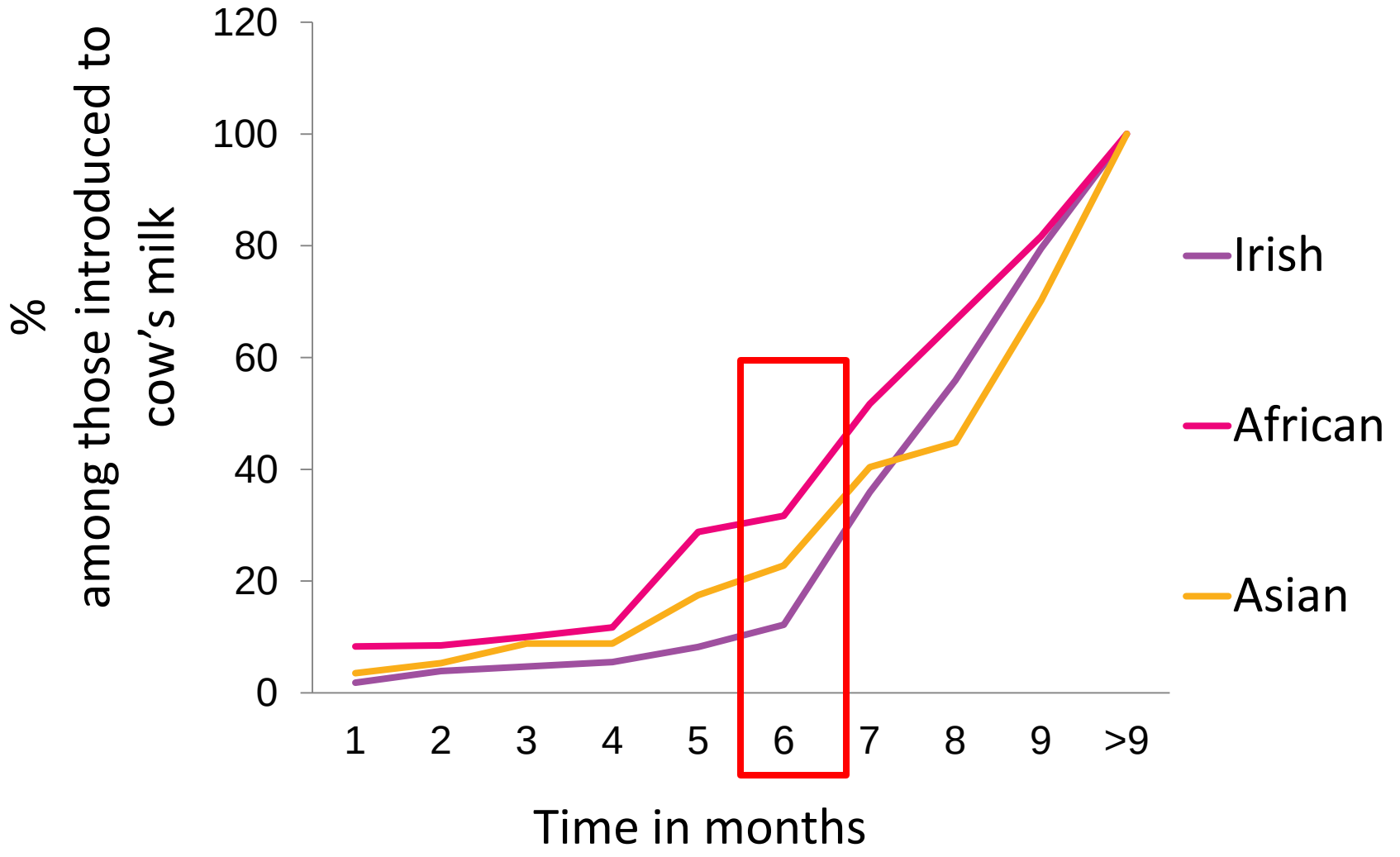


Culture

Maternal Ethnicity	By 9 months	
	P	**OR**
Irish		1.0*
African	<0.001	0.467
Asian	0.016	0.616

1.0* = Reference group *P*= *P* value OR= Odds ratio

Culture


% among those introduced to cow's milk
120
100
80
60
40
20
0
1
2
3
4
5
6
7
8
9
>9
Time in months
Irish
African
Asian

Infant Feeding Practices

- **Adherence to infant feeding recommendations inter-related**
- **Common determinants:**
  - Maternal age
  - Education
  - Socioeconomic factors
  - Ethnicity
  - Parity
- **Facilitate tailoring of interventions**

Strengths

- **Large sample size (n=11,134)**
- **Nationally representative sample**
- **Wide range of data available**

Limitations

- **Appropriate vs. inappropriate introduction**
  - Partially overcome
- **Limited nutritional data**
- **Potential for recall bias**

Areas for Future Research

- **Type 1 Diabetes and Cow's Milk Introduction**

- The nature of consumption
- Supplementation to the diet
- Iron status
- Reason for introduction
- Knowledge of infant feeding guidelines

Conclusion

- **Prevalence of cow's milk introduction:**
  - 5.1% before 6 months
  - 40.4% by 9 months
- **Education**
  - Target at risk groups
  - Combined with breastfeeding promotion and weaning education
- **At risk:**
  - Young mothers
  - Low education levels
  - Single parents with ≥ 2 children
  - Dependant on Social Welfare payments
  - Recent immigrants of African or Asian origin

Thank you!

Any Questions?

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