

## ***Registry manual***

The required information to be entered in the registry is summarized below. It is advised to have these data available before beginning with the data entering process.

- Date of birth
- Gender
- Mutation(s)
- Enzyme activity and method used for measurement
- Level of education and social and occupational classification (patient, parents and sibling(s))

Level of education (ISCED 2011) explained below:

### **ISCED 0 Early childhood education**

### **ISCED 1 Primary education**

Fundamental skills in reading, writing and mathematics.  
Typically lasts 6 years from age 5-7.  
Preparation for ISCED level 2.

Primary education, elementary education or basic education  
(stage 1 or lower grades if an education system has one program that spans ISCED levels 1 and 2).

### **ISCED 2 Lower secondary education**

More subject oriented curriculum, introducing theoretical concepts across a broad range of subjects. Typically lasts from age 10-13 to 14-16 years. Preparation for ISCED level 3.

Secondary school (stage one/lower grades if there is one program that spans ISCED levels 2 and 3), junior secondary school, middle school or junior high school.

If a program spans ISCED levels 1 and 2, the terms elementary school or basic school (stage 2/upper grades) are often used.

### **ISCED 3 Upper secondary education**

Designed to complete secondary education. More differentiated, with an increased range of options and streams available.

Typically lasts from age 14-16 to 17-18 years.

Possibly direct access to ISCED level 4 and/or level 5, 6 or 7.

Secondary school (stage two/upper grades), senior secondary school, or (senior) high school.

#### **ISCED 4 Post-secondary non-tertiary education**

Non-tertiary qualifications required for progression to tertiary education (ISCED level 5, 6 or 7) or employment.

Technician diploma, primary professional education, or *préparation aux carrières administratives*.

#### **ISCED 5 Short-cycle tertiary education**

Practically-based, occupationally specific and preparing student to enter the labor market or provide a pathway to other tertiary programs.

Requires successful completion of ISCED level 3 or 4 with access to tertiary education.

(Higher) technical education, community college education, technician or advanced/higher vocational training, associate degree, or bac +2.

#### **ISCED 6 Bachelor's or equivalent level**

Academic and/or professional knowledge, skills and competencies, leading to a first degree or equivalent qualification.

Requires successful completion of ISCED level 3 or 4 with access to tertiary education or sometimes after completion of ISCED level 5.

Bachelor's program, license, first university cycle.

#### **ISCED Level 7 Master's or equivalent level**

Advanced academic and/or professional knowledge, skills and competencies, leading to a second degree or equivalent qualification.

Requires successful completion of an ISCED level 6 or 7 program.

Master programs or magister.

#### **ISCED Level 8 Doctoral or equivalent level**

Leading to an advanced research qualification.

Requires successful completion of specific ISCED level 7 programs.

PhD, DPhil, D.Lit, D.Sc, LL.D, Doctorate or similar terms.

The complete INTERNATIONAL STANDARD CLASSIFICATION OF EDUCATION 2011 can be found from <http://www.uis.unesco.org/Education/Pages/international-standard-classification-of-education>

- Neonatal data

Date of diet introduction

Neonatal illness

Encephalopathy

PTT/APTT/ALAT/ASAT/glucose values

If sepsis blood culture data GAL

- 1 - P (peak) concentration

- Date general follow up

- Length, weight, head circumference

- Ophthalmology data

- Brain follow up

Imaging (if available)

Data on development and neurological assessment

- Female - gonads

Spontaneous puberty

Induced

Hormone measurements

Pregnancy / children, if yes birth date of children

- Male - gonads

Cryptorchidism?

- Bones

DEXA: Lumbar spine Z-score or T-score

Fractures

Vit D (25-hydroxy D3) measurement

- Diet

Infant formula used

Recommended diet items

Ca supplements

Ca intake

Regarding follow-up, different evaluations at different time points can be filled in, by creating an extra eform. To do so, answer the question with 'yes' at the bottom of the page.

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## Demographics

### Demographics: Patient

If the language setting of your computer is set to English, please use a 'dot' to enter the digits after decimals.

Patient ID

If the language setting of your computer is set to Dutch, please use a 'comma' to enter the digits after decimals.

(XXXX)

Gender

Male

Female

Ethnicity all sites

If other, define:

▾

...

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## Galactosemia

Kind of galactosemia

▾

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## GALT

GALT gene mutation

If other, define:

▾

...

GALT enzyme activity

(%)

Unknown

Below detection limit

Detection limit

(%)

Measurement method GALT enzyme activity

- Radioactive
- Fluorescence enzyme coupled reaction (newborn screening public health laboratory)
- Fluorescence enzyme coupled reaction (biochemical genetics diagnostic laboratory)
- LC-MS/MS
- HPLC (High Pressure Liquid Chromatography)
- Unknown

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### GALE

GALE gene mutation

...  Unknown

GALE enzyme activity (%)

Unknown

Detection limit

Below detection limit

(%)

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### GALK

GALK gene mutation

...  Unknown

GALK enzyme activity (%)

Unknown

Detection limit

Below detection limit

(%)

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### Level of education

Age at collection of following data

(years) ...

Please specify highest level of education (please answer questions below as well)

Unknown

Highest level of education if patient is younger than 18 years old

- Regular education
- Special education

Level of education (ISCED 2011), see registry manual for detailed information

- ISCED 0 Early childhood education
- ISCED 1 Primary education
- ISCED 2 Lower secondary education
- ISCED 3 Upper secondary education
- ISCED 4 Post-secondary non tertiary education
- ISCED 5 Short-cycle tertiary education
- ISCED 6 Bachelor's or equivalent level
- ISCED 7 Master's or equivalent level
- ISCED 8 Doctoral or equivalent level
- Not applicable

### **Occupation/profession**

Please specify current occupation/profession (please answer questions below as well)

- Education in progress
- Unknown
- Not applicable

Social or occupational classification if patient is older than 18 years old (RGSC)

- I - Professional etc occupations - e.g. professors, doctors, lawyers,
- II - Managerial and Technical occupations - self-employed, proprietors SME; manager, engineer
- III - Skilled occupations
- IV - Partly-skilled occupations - call center employees
- V - Unskilled occupations - incl. unemployed, ancillary position

RGSC 3

- III: non-manual - e.g. IT-professions, health care professionals
- III: manual - e.g. mechanic

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### **Demographics: Family of patient**

**Father**

Please specify highest level of education (please answer questions below as well)

Unknown

Level of education father (ISCED 2011), see registry manual for detailed information

- ISCED 0 Early childhood education
- ISCED 1 Primary education
- ISCED 2 Lower secondary education
- ISCED 3 Upper secondary education
- ISCED 4 Post-secondary non-tertiary education
- ISCED 5 Short-cycle tertiary education
- ISCED 6 Bachelor's or equivalent level
- ISCED 7 Master's or equivalent level
- ISCED 8 Doctoral or equivalent level

### Occupation/profession

Please specify current occupation/profession (please answer questions below as well)

Unknown

Social or occupational classification (RGSC)

- I - Professional etc occupations - e.g. professors, doctors, lawyers,
- II - Managerial and Technical occupations - self-employed, proprietors SME; manager, engineer
- III - Skilled occupations
- IV - Partly-skilled occupations - call center employees
- V - Unskilled occupations - incl. unemployed, ancillary position

RGSC 3

- III: non-manual - e.g. IT-professions, health care professionals
- III: manual - e.g. mechanic

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### Mother

Please specify highest level of education (please answer questions below as well)

Unknown

Level of education mother (ISCED 2011), see registry manual for detailed information

- ISCED 0 Early childhood education
- ISCED 1 Primary education
- ISCED 2 Lower secondary education
- ISCED 3 Upper secondary education
- ISCED 4 Post-secondary non-tertiary education
- ISCED 5 Short-cycle tertiary education
- ISCED 6 Bachelor's or equivalent level
- ISCED 7 Master's or equivalent level
- ISCED 8 Doctoral or equivalent level

**Occupation/profession**

Please specify current occupation/profession (please answer questions below as well)

	<input type="radio"/> Unknown
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Social or occupational classification (RGSC)

- I - Professional etc occupations - e.g. professors, doctors, lawyers,
- II - Managerial and Technical occupations - self-employed, proprietors SME; manager, engine
- III - Skilled occupations
- IV - Partly-skilled occupations - call center employees
- V - Unskilled occupations - incl. unemployed, ancillary position

RGSC 3

- III: non-manual - e.g. IT-professions, health care professionals
- III: manual - e.g. mechanic

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**Sibling(s)**

Number of siblings

	<input type="radio"/> Unknown
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Please specify highest level of education per sibling (please answer questions below as well)

	<input type="radio"/> Unknown
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Please specify current occupation/profession per sibling (please answer questions below as well)

Education in progress

Unknown

Number

Healthy

Galactosemia

Age

Highest level  
of education  
< 18

Yes

Yes

<18

No

No

>=18

Yes

Yes

<18

No

No

>=18

Yes

Yes

<18

No

No

>=18

Yes

Yes

<18

No

No

>=18

Yes

Yes

<18

No

No

>=18

Patient number

Gender

 ...

## Neonatal information

### Neonatal signs and symptoms

Age at onset of galactose restricted/free diet

Years

Months

Weeks

Days

Diagnosed with newborn screening

 ▾

Acute neonatal illness

 ▾

Encephalopathy in newborn period

(altered mental state: depressed consciousness with or without neurological signs)

 ▾

Cataract in newborn period

 ▾

Bleeding diathesis in newborn period

(abnormal PT APTT)

 ▾

Infection in newborn period  
(clinical signs of infection/sepsis)

 ▾

Positive blood culture

 ▾

Positive blood culture remark

 ...

## Neonatal clinical chemistry

Elevated liver enzymes in the newborn period  
(ALT, AST > 30 U/L)

 

Hypoglycemia in newborn period (<2.6 mmol/L)

 

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## Neonatal additional metabolic testing

Peak galactose-1-phosphate in newborn period (*Please use comma for decimal*)

 (*μmol/g Hb, XXX,XX*) (*mg %, XXX*)

If other unit than above, please specify (including unit)

 

Not done

Unknown

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Date of follow up  
(dd/mm/yyyy)

**Galactosemia Network**



Patient number

Gender

 ...

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## ***General follow-up***

Did a long term follow up take place?

Yes

No

Date follow up

 (dd/mm/yyyy)

Age

 (years) ...

Head circumference (cm)

 (XX,X)

Unknown

Height (cm) *(Please use comma for decimal)*

 (XXX,X)

Unknown

Short stature (outside TH range)

 ▾

Weight (kg)

 (XXX,X)

Unknown

Weight (pounds)

 (XXX,X)

Unknown

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Lenticular changes/opacifications in childhood

 ▾

Lenticular changes/opacifications adulthood (18-50)

 ▾

Remarks (optional)

**Open another eForm long term follow-up?**

**No**

**Yes**

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Patient number

Gender

 ...

## ***Brain follow-up***

Did a brain follow up take place?

Yes

No

Is data on brain imagining available?

 ▾

If yes, describe

If other, describe

 ▾  ...

Developmental delay

Age of onset

 ▾  ▾ ▾

Language delay

Age of onset

 ▾  ▾ ▾

Impairment in grammar

Age of onset

 ▾  ▾ ▾

General motor abnormality

Age of onset

 ▾  ▾ ▾

Impairment in vocabulary

Age of onset

Speech defect

Age of onset

Verbal dyspraxia

Age of onset

Dysarthria

Age of onset

Ataxia

Age of onset

Chorea

Age of onset

Ballismus

Age of onset

Tremor

Age of onset

Dystonia

Age of onset

Athetosis

Age of onset

Seizures

Age of onset

Behavioral problems

Age of onset

ADHD

Age of onset

Diagnose of autism spectrum disorder

Age of onset

Depression

Age of onset

Anxiety disorder

Age of onset

Schizophrenia

Age of onset

Remarks (optional)

**Open another eForm brain follow-up?**

**No**

**Yes**



Date of data collection  
(dd/mm/yyyy)

**Galactosemia Network**



Patient number

Gender

 ...

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## ***Gonads and reproduction follow-up***

Did a gonads and reproduction follow-up take place?

Yes

No

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Delayed puberty  
(Boys: lack of increase in testicle size by age 14  
Girls: lack of breast development by age 13)

 ▾

Children (only biological children)

 ▾

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Cryptorchidism

 ▾

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Spontaneous puberty

 ▾

Age of onset

 (years)

Induced puberty

 ▾

Age of onset

 (years)

Hormone replacement therapy  
(beyond induction of puberty)

 ▾

Age of onset

 (years)

Primary ovarian insufficiency (POI)

Women < 40 years, >= 40 months amenorrhea  
2 independent, more than 1 month apart FSH  
levels in the menopausal state

 ▾

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Gonads imaging

 

if yes, please specify imaging method used  
date of measurement and short summary of

 

Tried to conceive

 

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Pregnancy

 

Spontaneous pregnancy

 

Assisted reproduction

 

Age of mother at first delivery

 (Years)

How many children

 (XX)

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**Open another eForm gonads and reproduction follow-up?**

**No**

**Yes**

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Date of data collection  
(dd/mm/yyyy)

**Galactosemia Network**



Patient number

Gender

 ...

## ***Bone health follow-up***

Did a bone health follow-up take place?

Yes

No

Date follow up

 (dd/mm/yyyy)

Age

 (years) ...

Bone mineral density (Please use comma for decimal)  
lumbar spine (z-score)

 (+/- X,X)

Use Z-score:

1-for girls <18 yr or women >18 yr and premenopausal  
2-for boys < 18yr and men <50 yr

Bone fractures

 ▾

If 25-hydroxy vit D test, (Please use comma for decimal) Other measurement for vitamin D  
please enter value in nmol/L

 (XX,X)

Bone mineral density (Please use comma for decimal)  
lumbar spine (t-score)

 (+/- X,X)

Use T-score:

1-for women >18 yr and postmenopausal  
2-men >50 yr

Vitamin D test performed?

 ▾

Does the patient use vitamin D or calcium supplements

 ▾

Physical activity

*The World Health Organization (WHO) recommends 60 minutes of moderate- to vigorous-intensity physical activity per day for children and 150 minutes per week for adults.*

**Open another eForm bone health follow-up?**

**No**

**Yes**

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Patient number

Gender

 ...

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## **Diet**

Is data on diet available?

Yes

No

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Which infant formula was used at diagnosis? *(Multiple options possible)*

Soy

Elemental

Casein

Hydrolysate with MCT

Whey hydrolysate with MCT

Whey hydrolysate with MCT

Is the recommended diet completely lactose free? *(No milk, yoghurt, butter or lactose as ingredient in food)*

 ▾

Does the recommended diet restrict:

Galactosides (peas, beans, legumes, cocoa, soya)

 ▾

Any fruit and vegetables (for their free and bound galactose)

 ▾

Nucleoproteins (egg, liver, kidney)

 ▾

Does the recommended diet allow a specified amount of galactose in the diet?

 

If yes: estimated amount in mg/day

 (XXXX)  Not calculated

Target calcium intake in mg/day Natural calcium intake in mg/day

 (XXXX) (XXXX)

Unknown

Unknown

Calcium supplement

Amount of calcium supplement (mg/day)

  (XXXX,XX)

Vitamin D

Amount of vitamin D

 

microgram/day

Unknown

IU (International Unit)

Other vitamins or supplements If yes, specify

  ...

Is any type of cheese (derived from dairy milk) allowed?

 

If yes, specify type and name

 ...

Has the patient increased galactose intake independently? If yes, specify

  ...

Does the amount of daily allowed galactose increase with age?

 

If yes:

Do you purposely relax the diet in this patient?

 

At what age do you relax the diet?

 (years)

How much extra galactose do you aim to give?

 

What is the reason for dietary relaxation in this patient?

Patient choice

New insights

Other      If other, specify

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**Open another eForm diet?**

**No**

**Yes**

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Date of data collection  
(dd/mm/yyyy)

**Galactosemia Network**



Patient number

Gender

 ...

## **Remarks**

Remarks

**Open another eForm Remarks?**

- No**
- Yes**



Date of data collection  
(dd/mm/yyyy)

**Galactosemia Network**



Patient number

Gender

 ...

## ***End of Registry***

End of registry

Yes

No

Date end of registry (dd/mm/yyyy)

Reason end of registry

Patient died

Loss to follow up

Patient withdrew from study

Other

Other reason

 ...