

PRETERM BIRTH AND BRAIN INJURY



When is a baby born preterm?

Before 28 weeks

Extremely preterm

28-32 weeks

Very preterm

32-37 weeks

Late preterm

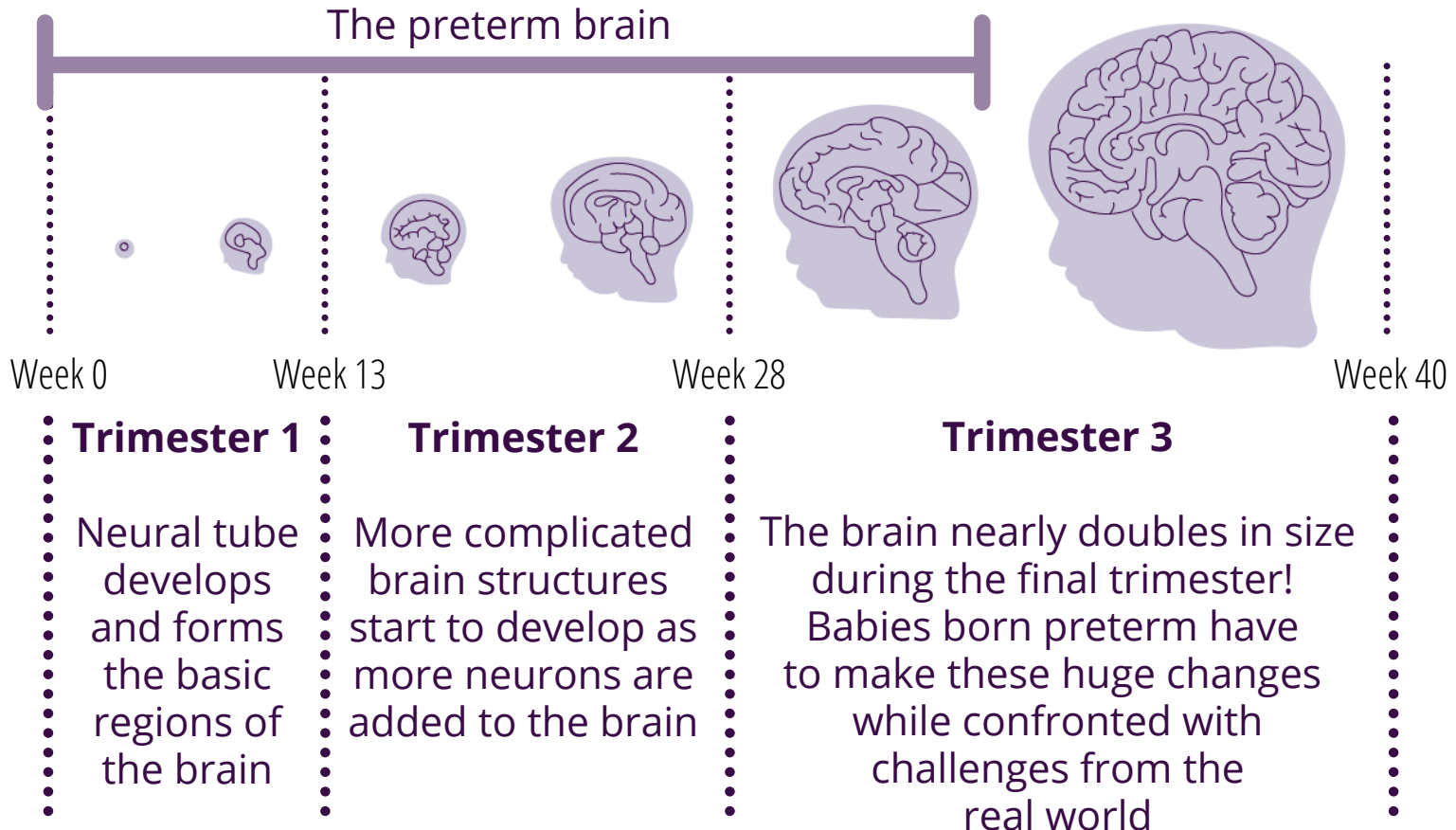
In the European Union 400,000 babies are born preterm every year



The average length of pregnancy, or gestation, is 40 weeks

Preterm birth disturbs the development of the baby's brain

The preterm brain

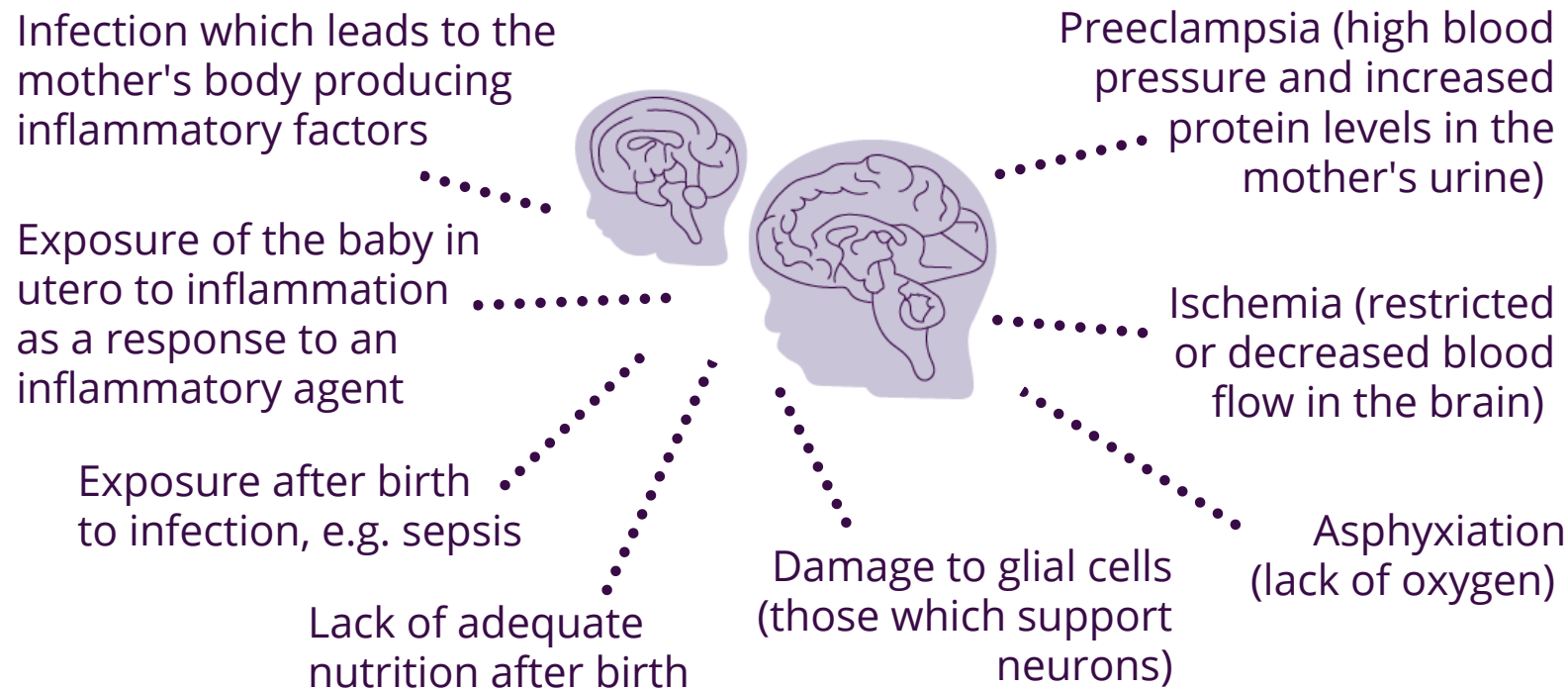


This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 874721. Results reflect the author's view only. The European Commission is not responsible for any use that may be made of the information it contains.

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What can cause preterm brain injury?



What can be the long-term effects of preterm brain damage?



Cognitive impairment

Visual disturbances

Autism

Epilepsy

Cerebral palsy

Delayed development

Key messages



We have treatments and interventions which can improve the effects of brain injury, for example by reducing pain and increasing mobility.

However, there are no therapies to repair or reverse brain damage.



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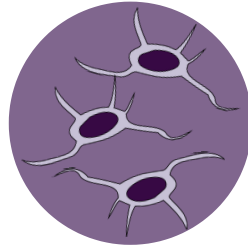
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The PREMSTEM project is investigating stem cells as a repair mechanism to treat brain damage in preterm babies



Stem cells:
The body's
building blocks!



We use donated
Human Mesenchymal Stem Cells
taken from umbilical cord tissue
in our research

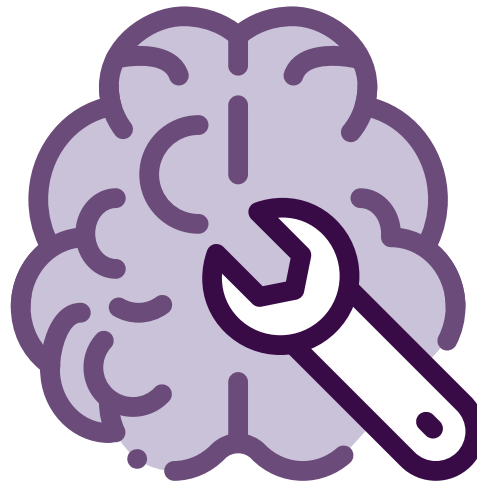
Stem cells help the brain to help itself!

Stem cell treatments make and release amazing trophic factors that can:

Stimulate the brain's
own stem cells to
become active and
start repair processes

Reduce inflammation
and allow new
connections between
cells to occur

A trophic factor is a molecule that supports cell survival



Support the
(re)building of
blood vessels to
bring nutrients to
the brain

Enable cells to
insulate and improve
connectivity between
brain regions



premstem.eu



@premstem #premstem



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