

A flexible approach to

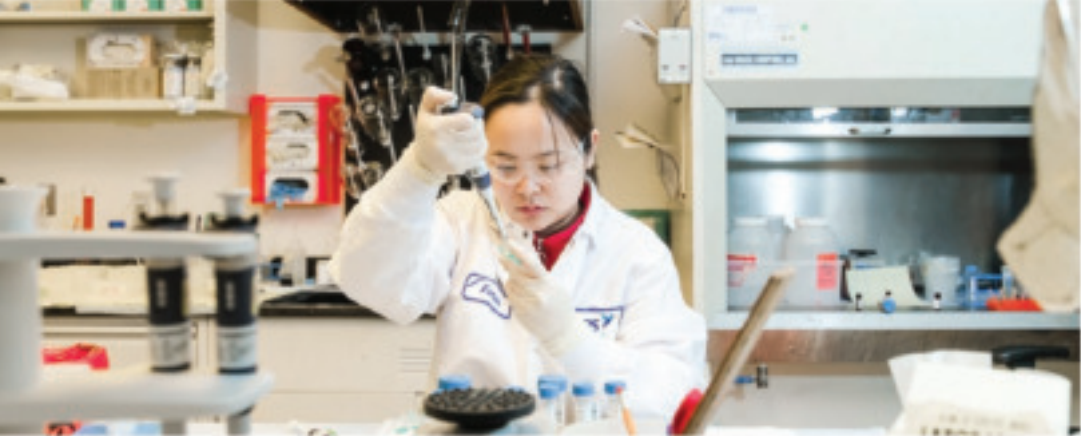
# Cerebrospinal Fluid (CSF) Sampling

**THE BLOOD BRAIN BARRIER, OR BBB, IS A UNIQUE, SELECTIVE PORT OF ENTRY FOR LARGE AND SMALL MOLECULES TO ENTER THE BRAIN.** The selective quality of the blood brain barrier can prevent or limit neuropharmaceuticals from eliciting desired pharmacological effects at attainable dose levels.

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**TIME IS OF THE ESSENCE IN DRUG DEVELOPMENT.  
CONTACT THE QPS BUSINESS DEVELOPMENT TEAM TODAY!**

**CALL** +1 512 350 2827 **EMAIL** [infobd@qps.com](mailto:infobd@qps.com)



## Why Researchers might need CSF Sampling?

Just as blood tests can reveal pharmacokinetic information about drug levels in other parts of the body, cerebrospinal fluid (CSF) can likewise reveal pharmacokinetic information about drug concentrations in the central nervous system.

CSF drug concentrations are useful for drug candidates when:

- CSF concentration is the therapeutic endpoint
- An indirect measure for the availability of drug candidates in the brain parenchyma is needed
- Different sets of CSF biomarkers need to be measured (this may be a valuable tool to determine the efficacy and/or safety of a given drug candidate in an early stage of the development program)

## QPS Netherlands' Advantage is High Quality

Our physical proximity to and working relationship with world class medical professionals ensures that CSF samples are efficiently obtained under clinical conditions of the highest quality.

Located on the premises of the University Medical Center Groningen (UMCG), QPS:

- Works together with the Department of Anesthesiology of the UMCG
- Performs all procedures in compliance with the principles of GLP, GC and GMP

## QPS Offers CSF Sampling Services

- Lumbar puncture and continuous or serial CSF sampling for clinical trials in healthy volunteers and patients.
  - The safety and burden for healthy volunteers of continuous or serial CSF sampling for up to 30 hours via an indwelling lumbar catheter has been assessed together with the Department of Anesthesiology of the UMCG.
  - The procedures needed for serial sampling of CSF for 30 h were very well tolerated by all healthy volunteers thereby establishing continuous or serial CSF sampling as a standardized research tool for future drug development studies within QPS Netherlands' CPU environment.
- Unique biomarker capabilities such as the support of clinical Alzheimer programs with accurate measurements for  $A\beta_{38}$ ,  $A\beta_{40}$  and  $A\beta_{42}$  in CSF and plasma samples
- Apolipoprotein E (ApoE) genotyping and analysis is available for patient stratification within 72 hours
- Tau protein and inflammatory marker panels



FLEXIBILITY. AGILITY. SPEED.

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**QPS is a Global CRO**  
with locations around the world  
to serve the evolving needs of the  
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