

A multi-site cerebrospinal fluid collection initiative to facilitate therapeutic development for Huntington's disease

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Background

With several clinical trials in progress and more expected to launch in the next few years exploring novel therapeutic approaches for treating Huntington's disease, biomarkers are needed to evaluate target engagement, efficacy and disease progression.

Cerebrospinal fluid (CSF) is an ideal fluid compartment for assessing HD biomarkers, particularly pharmacodynamic markers, due to its proximity to the brain. There is currently no high quality repository of CSF from well-characterized HD gene expansion carriers spanning the disease spectrum.

HDClarity will provide such a repository in order to expedite research into biomarkers for HD.

Study Design

CSF and blood samples will be collected at up to 30 sites using a standardized protocol. Careful collection of clinical and phenotypic data on each donor will enable us to appropriately select subsets of samples for each set of experimental assays. HDClarity uses the Enroll-HD Platform to identify participants and collect standardized data.

HDClarity is sponsored by University College London. Central Coordination is based at UCL Huntington's Disease Centre. Site setup is supported by University of Ulm (Dr Jan Lewerenz). It is funded and supported by CHDI Foundation, Inc.

Participants

600 participants will be recruited from approximately 30 sites:

1. **Healthy controls**
2. **Early Pre-manifest HD** DCS < 4; CAG ≥ 40; BOP < 250
3. **Late Pre-manifest HD** DCS < 4; CAG ≥ 40; BOP ≥ 250
4. **Early Manifest HD** DCS = 4; CAG ≥ 36; TFC 7-13
5. **Moderate Manifest HD** DCS = 4; CAG ≥ 36; TFC 4-6
6. **Advanced Manifest HD** DCS = 4; CAG ≥ 36; TFC 0-3

DCS - Unified Huntington's Disease Rating Scale Diagnostic Confidence Score; BOP - burden of pathology score ((CAG – 35.5) × age); TFC, Total Functional Capacity Score.

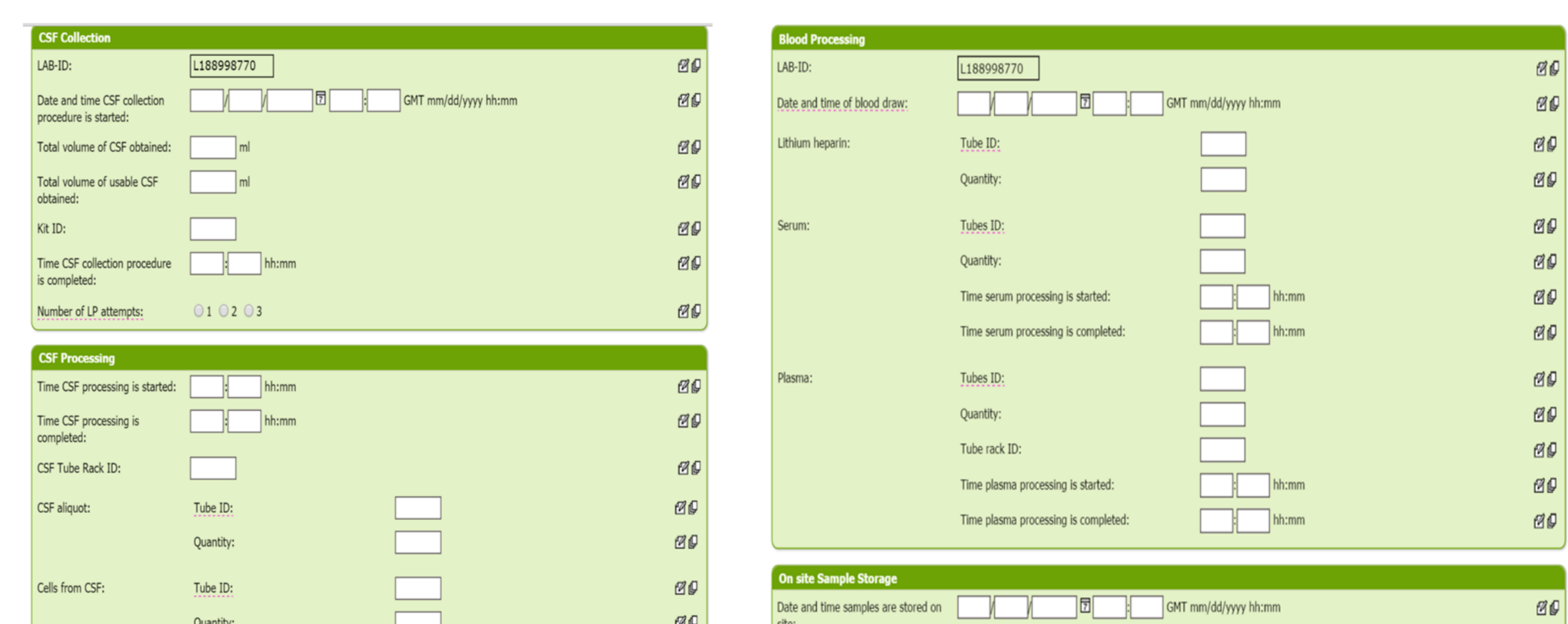
Procedures

Participants will attend two study visits and may attend an optional third visit: a Screening Visit, a Sampling Visit and an optional Repeat Sampling Visit. During the Screening Visit, medical history, and clinical and phenotypic data will be obtained. Participants who meet the eligibility requirements of the study and are willing to continue in the study, will return for a Sampling Visit. During that visit, biosamples will be collected following an overnight fast: blood will be obtained via venipuncture and CSF will be obtained via lumbar puncture. Some participants may be invited to return for a Repeat Sampling Visit approximately 4-8 weeks later.

Custom biosample kits will be supplied by BioRep to supply all equipment for standardised CSF and plasma collection and processing. BioRep is also the sample biorepository.



A bespoke electronic data capture (EDC) system built on the Enroll-HD platform will be used to record all data, procedures and samples and handle site payments automatically.



Analysis

In one usage, the sample collection will be assayed to determine if the kynurenine pathway (KP) is dysregulated in premanifest and early HD in comparison to healthy controls, and to evaluate the variability in KP metabolite levels within each participant group. The sample collection will also enable the further development and validation of assays to measure huntingtin protein (HTT) in CSF, an attractive pharmacodynamic biomarker for HTT lowering clinical trials. The sample collection will also enable the continued evaluation of a number of potential novel biomarkers of disease stage and progression. A CSF Consortium consisting of the CI, CHDI and PIs interested in research uses of CSF will provide scientific oversight into the use of samples and analysis of data.

For more information or to enquire about establishing an HDClarity clinical site, please email the Chief Investigator (e.wild@ucl.ac.uk)