# QOL Disease（1/3）

（Revised August 7, 2025）

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| Dementia | ● Development or identification of biomarkers associated with cognitive function, preferably those linked to clinical trial endpoints, such as ADAS-Cog, MMSE, CDR-SB.<br>● Exploration of therapeutic targets based on these biomarkers<br>● Human brain samples, blood samples from dementia patients, or omics datasets associated with cognitive function history<br>● Objective indicators to evaluate the quality of life (QOL) of dementia patients. |
| Sleep disorders | ● Clinical data-driven target discovery methods, or clinically identified targets, for sleep-related movement disorders and parasomnias.<br>● Startups or pharmaceutical companies engaged in drug discovery for such disorders. |
| Sleep apnea syndrome | ● High-throughput genioglossus muscle activity evaluation system<br>● Arousal threshold evaluation system in response to hypercapnia or hypoxia automatically.<br>● Technologies capable of analyzing the combined effects of drugs that target multiple endotypes of SAS in non-clinical settings. (including in silico approaches)<br>● Approaches for identifying unmet medical needs and extracting therapeutic targets in sleep apnea using real-world data or clinical databases (e.g., polysomnography, CPAP devices, actigraphy)<br>● Predictive evaluation systems or surrogate markers for assessing treatment efficacy on secondary effects of sleep apnea (e.g., blood pressure, fatigue, metabolic outcomes)<br>● Technologies for detecting central sleep apnea using portable monitors (Home sleep apnea testing) and for quantifying loop gain. |

# QOL Disease （2/3）

（Revised August 7, 2025）

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| Motor dysfunction | ● Markers serving as surrogates for clinical muscle impairment and motor/respiratory function, including those derived from wearable devices<br>● Pompe disease models other than rodents that exhibit muscle and motor dysfunction and closely resemble the clinical pathology<br>● Clinical data-driven target discovery methods, or clinically identified targets, for amyotrophic lateral sclerosis |
| Pain | ● Technologies or methods for the objective assessment of pain in clinical |
| Neuroinflammation | ● Human primary microglial culture system using samples from patients with central nervous system disorders<br>● Single-cell transcriptome analysis of human microglia (not single-nucleus transcriptomics) |
| Obesity | ● A Small molecule binds to both GLP-1R and GIPR in the non-clinical drug discovery research stage, or screening technology to search for them |
| Hearing Loss | ● Human temporal bone samples with a history of hearing evaluation or their omics data<br>● Single cell analysis data for human cochlear cells<br>● Drug discovery targets and approaches to repair spiral ganglion neurons and ribbon synapses<br>● Formulation technology for trans-tympanic administration |

# QOL Disease（3/3）

SHIONOGI

（Revised August 7, 2025）

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| Addiction | ● Biomarker to detect the mechanism of action on drug discovery targets and predict pathological changes<br>● Non-clinical evaluation techniques with high clinical predictability |
| Translational Research | ● Companies or researchers who have developed surrogate endpoints to replace primary endpoints in clinical trials and have experience in negotiating with and submitting applications to authorities, except in the oncology field.<br>● Companies or researchers with extensive experience in developing effective biomarkers for drug discovery using clinical image databases (fMRI, PET and others).<br>● Companies or researchers who are experienced in utilizing biobanks or clinical trial samples to conduct biomarker investigation that surrogate the mechanisms of drugs or pathologies from large-scale clinical samples and clinical information.<br>● Companies and researchers who have the technical capabilities and experiences to provide scientific advise and on non-clinical fMRI analysis<br>● Companies and researchers who have a clinical database and the technical capabilities in order to identify extracellular vesicles with organ-derived surface antigens |