Project Details	
Project Code	PHS27Ex Fornwagner
Title	Understanding how GLP-1 (Ozempic-type) medications may shape everyday social and economic decisions
Research Theme	Population Health Sciences
Project Type	Dry lab
Summary	Ozempic and Mounjaro (semaglutide and tirzepatide)—GLP-1 receptor agonists originally developed for diabetes—are now increasingly used for weight loss, with millions of people prescribed these medications. Yet we know almost nothing about how they affect economic and social decisions. Because these drugs act on the brain's reward system, they may quietly change how patient, risk-taking, cooperative or competitive people are—with consequences for work, money and society. This PhD combines economics, psychology and health science to look into this topic for the first time. You will gain skills in behavioural experiments, data science and health research through meta-analysis, online experiments, and more.
Description	**Background** GLP-1 receptor agonists such as semaglutide (Ozempic®/Wegovy®) are now among the world's most widely prescribed medicines: approximately 1.6 million UK adults used them for weight loss last year, with projections exceeding 13 million by the early 2030s (Jackson et al., 2026). Beyond metabolic action, GLP-1 RAs modulate the brain's mesolimbic dopamine system — the circuitry underpinning reward and motivation (Dickson et al., 2012; Aquili & Lim, 2025). This already produces measurable behavioural change: reduced cravings for food, alcohol and nicotine (Eren-Yazicioglu et al., 2021; Leggio et al., 2023). It is therefore timely and novel to ask whether GLP-1 RAs reshape everyday social and economic behaviour known to be dopamine-sensitive. At population scale, even modest shifts could matter for economy and society — yet the question is almost entirely unexplored. **Patient and Public Involvement and Engagement (PPIE)** A PPIE focus group of people with lived experience of GLP-1 use will be embedded in the research team, helping refine research questions, guide outcome selection, and ensure findings are communicated accessibly to patients and clinicians. **Research question** Do GLP-1 receptor agonists influence social and economic behaviour — and, if so, which behaviours, through what mechanisms, and for whom? Understanding this matters because behavioural changes directly influence physical, mental and financial health: for example, motivation to exercise, maintain relationships, work productively, and manage finances. Social and economic behaviour includes how patient, risk-taking, cooperative, competitive, generous, trusting or honest people are, and how much effort they invest. We hypothesise GLP-1 RAs alter these through effects on the brain's reward system, with downstream health consequences. The precise behaviours studied will be refined by the student and by the evidence. **Objectives — three linked studies** Study 1 (Year 1) — Systematic review and meta-analysis. The student will systematically map and quantify evidence linking dopaminergic modulation (specifically GLP-1) to social and economic behaviour,

	registering the protocol on PROSPERO. Working with PPIE advisors, they will identify which behavioural outcomes most matter to patients and are reliably measured, generating prioritised questions for Study 2. Skills: systematic review, meta-analysis, PPIE co-production. Study 2 (Year 2) — Pre-registered online behavioural experiment. A large economic experiment will compare current GLP-1 RA users with matched non-users across validated decision-making tasks (selected via Study 1 and PPIE). Participants will earn incentive-compatible payment (earnings depend on their task choices: fixed show-up fee plus performance bonuses). The sample will be stratified by sex, age and socioeconomic status, with pre-registered attention to moderators: treatment duration, BMI, eating behaviour (Wong et al., 2025). Recruitment and verification: Three complementary routes ensure verified GLP-1 use: (i) NIHR Be Part of Research (NHS-verified records); (ii) online platforms with pharmacy/prescription verification and medical-history screening; and (iii) NHS obesity and diabetes clinics (newly initiated users). All analyses pre-registered on the Open Science Framework. Study 3 (Years 3–4) — Flexible by design. Shaped by Studies 1–2 findings and the student's interests. Two concrete examples: (i) a longitudinal study of adults before/after GLP-1 initiation (stronger causal inference); or (ii) a laboratory study adding neurocognitive or physiological measures to probe drug-brain-behaviour mechanisms. Other directions (e.g. policy-oriented) remain open. This flexibility is intentional and is a strength of the design. **Student ownership**The project is structured so the student steers it: defining the review scope and behaviours of interest (Prep/Year 1); conducting the meta-analysis that shapes Study 2; and determining Study 3's direction based on findings and their own interests. Throughout, the student leads pre-registration, analysis and dissemination, supported by an interdisciplinary team: behavioural economics (Fornwagner), reward psychology and eating behaviour (Lawrence), clinical obesity medicine (Andrews), and adolescent metabolic health (Hamilton-Shield). **Significance and outputs** The studentship will deliver the first evidence on whether and how GLP-1 RAs reshape social and economic behaviour, with at least three publishable outputs directly relevant to clinicians, regulators and policymakers. Null findings will be reported transparently and are scientifically valuable in an unexplored field.
Can be completed part time?	Yes
Supervisory Team	
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