Reduction in systolic blood pressure (SBP) with semaglutide treatment is not due to weight loss (WL) alone: data from SUSTAIN 1 – 5 *Subramanian G (1), Bain SC (2), Davies M (3), Knop FK (4), Vrazic H (5), Skjøth TV (5), Lingvay I (6) (1) Novo Nordisk Ltd., Gatwick, UK; (2) Swansea University, Swansea, UK; (3) University of Leicester, Leicester, UK; (4) University of Copenhagen, Copenhagen, Denmark; (5) Novo Nordisk A/S, Søborg, Denmark; (6) University of Texas Southwestern, Dallas, TX, USA*

Semaglutide significantly reduces HbA1c, body weight (BW) and SBP. This post-hoc analysis investigates the contribution of WL to SBP reductions.

SUSTAIN 1–5 randomised 3918 patients with inadequately controlled type 2 diabetes for 30 or 56 weeks to once-weekly semaglutide 0.5 or 1.0 mg or comparator (sitagliptin, once-weekly exenatide, insulin glargine or placebo). Using a mediation analysis, reduction in SBP was categorised as WL-mediated (indirect) or WL-independent (direct effect of semaglutide). SBP reduction was also evaluated across weight-change categories.

Across SUSTAIN 1–5, mean SBP reductions ranged from –2.6 to –5.1 mmHg and –2.7 to –7.3 mmHg, with semaglutide 0.5 and 1.0 mg, respectively, vs –1.0 to –2.3 mmHg with comparators ($p < 0.02$ vs comparator for all trials except SUSTAIN 1 [both doses] and SUSTAIN 5 [0.5 mg]). Mean BW changes ranged from –3.5 to –4.3 kg and –4.5 to –6.4 kg with semaglutide 0.5 and 1.0 mg, respectively, vs –1.9 to +1.2 kg with comparators ($p < 0.0001$ vs all comparators). Across all trials, both WL-dependent and WL-independent mechanisms contributed to observed SBP reduction with semaglutide. Greater reductions in SBP with semaglutide vs comparators occurred across all weight-change categories (>4.0 kg, 0–4.0 kg, no WL/BW gain).

With semaglutide, greater WL was generally associated with greater SBP reductions. However, SBP reductions were driven by both WL-mediated and WL-independent mechanisms, suggesting that the SBP reduction observed with semaglutide is not explained by WL alone.