Response to comment on: Tseng C-H, Tseng C-P, Chong C-K et al (2006) Increasing incidence of diagnosed type 2 diabetes in Taiwan: analysis of data from a national cohort. *Diabetologia* 49:1755–1760

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To the Editor: I agree with the point raised by Chen and Boucher that ‘if associations are found, cessation of betel chewing would be an additional target for intervention for reduction in the problems of obesity and type 2 diabetes, as well as in cancer prevention’ [1]. As observed in the general population [2, 3], betel chewing is more prevalent in younger male patients with type 2 diabetes, and, according to a study with a small sample size, obesity is more common in diabetic patients who chew betel nut [4]. When we reanalysed the baseline characteristics of men with incident cases of type 2 diabetes in the years 1992–1996, we also noticed that chewers are characterised by a younger age of onset (56.9 ± 10.9 vs 61.2 ± 11.8 years, $p < 0.001$) and a higher BMI (24.9 ± 3.6 vs 24.5 ± 3.4 kg/m², $p < 0.001$). In the study with the small sample size, we also observed poorer glycaemic control in diabetic patients who are betel chewers [4]. Obesity has consistently been shown to be an independent risk factor for the development of type 2 diabetes in Taiwan [5–7], and such a relationship can be

even stronger in women than in men [7]. Taking into account the fact that the aetiology of obesity is multifactorial and its link with type 2 diabetes is similarly demonstrated in both sexes, and the observation that betel chewing is not common in the female population in Taiwan, it is reasonable to recommend that any causes leading to obesity should be considered potential targets for the prevention of type 2 diabetes. Furthermore, in Taiwan, obesity is associated with microalbuminuria in type 2 diabetic women [8] and with coronary artery disease in all patients with type 2 diabetes [9]. Betel chewing in men with type 2 diabetes is associated with a twofold higher risk of albuminuria (defined by a urinary albumin:creatinine ratio of ≥ 30 µg/mg) after multivariate adjustment [4]. Therefore, cessation of betel chewing, a habit that is much more prevalent among young men in both the diabetic and the non-diabetic population in Taiwan, might not only be effective in the prevention of obesity and type 2 diabetes, it could also be beneficial for glycaemic control and the prevention of nephropathy in diabetic patients who are chewers. On the other hand, treatment of obesity, disregarding its aetiology, might also reduce the risk of macro- and microvascular complications in patients with type 2 diabetes.

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