**Supplementary table S3:** Possible confounders and co-interventions affecting the effect of weight loss

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| **Author, year** | **Possible confounders** | **Important co-interventions** |
| **Nguyen, 2016** | The authors did control for many important variables, including:  BMI, age, education, alcohol and coffee intake, presence of hypertension, and diuretic use measured during the 12 months before the incident gout attack.  But they did not control for:  Renal insufficiency, use of urate lowering medication, presence of tophi, disease duration, or baseline values of outcomes of interest. | The reason for BMI change is likely to be related to important co-interventions, which could affect the outcomes, such as:  Change in diet, medication that affects sUA levels, physical activity, and sickness. |
| **Dalbeth, 2014**  **(part 1 and 2)** | No control group, hence, is confounding inherently not controllable.  Nine patients (75%) used urate-lowering medication at baseline. | No control group, hence, important co-interventions may have been present, such as:  Change in use of urate-lowering medication, and surgery. |
| **Romero-Talamas, 2014** | At baseline, the groups differed with respect to age, BMI, urate-lowering medication use, and the authors did not control for this in the results. | Type of surgery and diet were not the same between groups, and bariatric patients received a 2-week preoperative- and 2-week post-operative liquid, high-protein diet. |
| **Zeng, 2012** | The study is randomized and no apparent difference between the groups at baseline. | Special diet (i.e. low-purine and high-protein) was not balanced between the groups. |
| **Perez-Ruiz, 2011** | At baseline, the groups differed with respect to sUA. | The reason for weight loss is likely to be related to important co-interventions, which could affect the outcomes, such as:  Change in diet, medication that affects sUA levels, physical activity, and sickness. |
| **Zhu, 2010\*** | The authors did control for many important variables, including:  Age, congestive heart failure, hypertension, diuretic use, serum creatinine level, alcohol intake, intake of fructose, caffeine, total protein, polyunsaturated fat, monounsaturated fat, saturated fat and fibre.  But they did not control for:  Baseline BMI, presence of renal insufficiency, use of urate lowering medication, presence of tophi, disease duration, or baseline values of outcomes of interest i.e. sUA (normalization). | The reason for weight change is likely to be related to important co-interventions, which could affect the outcomes, such as:  Change in diet, medication that affects sUA levels, physical activity, and sickness. |
| **Barskova, 2009** | No control group, hence, is confounding inherently not controllable.  Nine patients (39%) had hypertension at baseline. | No control group, hence, important co-interventions may have been present, such as:  Metformin. |
| **Friedman, 2008** | No control group, hence, is confounding inherently not controllable. | No control group, hence, important co-interventions may have been present, such as  Surgery and liquid diet with protein supplementation as preoperative treatment. |
| **Dessein, 2000\*** | No control group, hence, is confounding inherently not controllable.  Hypertension was present in some patients. | No control group, hence, important co-interventions may have been present, such as:  Change in diet. |
| **Brandstetter, 1986** | At baseline, the groups differed with respect to weight. Furthermore, the groups were followed for different amounts of time. | Diuretics were the only difference in interventions between the two groups, but this may have affected weight loss and sUA. |

BMI, body mass index; sUA, serum uric acid.