**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 asSurgery 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.