Current models on protistan size selective feeding assume that contact probability is the factor that largely explains observed food preferences. Contact probability is generally expected to be positively correlated to prey size and therefore to explain observed food selection for larger prey items. We critically tested these basic assumptions on size selective feeding using the interception-feeding chrysomonade nanoflagellates *Ochromonas* sp. and *Spumella* sp. Mechanisms of differential feeding were studied during distinct stages of the selection process, i.e., contact probability, capture efficiency, ingestion efficiency and differential digestion, by means of high resolution video microscopy. Food selection was investigated using a mixture of microspheres ranging from 0.4 to 1.8 µm in diameter, as well as a mixed bacterial community. In contrast to current model assumptions the contact probability was highest for microspheres of intermediate size (0.9 to 1.2 µm), but was not generally positively correlated with prey size over the whole prey size range. Capture and ingestion also proved to be involved in size selection. The pattern of size selective feeding was the same, independent of the food concentration ($p = 0.968$ for *Ochromonas*, $p = 0.971$ for *Spumella*). Even though the capture rate was significantly higher for attached flagellates than for swimming flagellates ($p < 0.001$), size selectivity was not affected ($p > 0.05$). For these reasons it is concluded that size selection is not actively regulated by the flagellate, but a passive process. Our results indicate that (i) size selection is not actively regulated by the flagellate, (ii) contact probability is not generally positively correlated with prey size, but shows a maximum for intermediate-sized prey regarding the offered prey size spectrum of 0.3 to 2.2 µm, and (iii) selection steps other than contact probability are crucial for size selection and should be integrated in models on size selection.