

# Effects of Removing Cows from Chronic Oxytocin Use During Lactation

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## Introduction

It is a relatively common practice on dairy farms to administer oxytocin i.m. to cows with poor milk let down at the time of milking. This practice is often perpetuated throughout a cow's lactation because of the fear that once a cow is started on oxytocin she will be so addicted that upon removal she will develop udder problems or drop considerably in milk production. Oxytocin is approved for use in milk let down but not labeled for use to increase production. If cows are started on oxytocin for poor let down but are kept on for fear of loss of production this could be construed as extra label use. The objective of this study was to test the effect of several different methods of removing cows from chronic oxytocin treatment during lactation.

## Materials and Methods

The study was conducted on a commercial dairy in central New York milking over 1200 Holstein cows in a double 28 herringbone parlor 3X. At the time of the study there were over 85 cows being given 2mL of exogenous oxytocin i.m. in the parlor. Cows were enrolled in the study, blocked by parity, and randomly assigned to one of 4 treatment groups with more cows purposely enrolled in treatment group 3. Treatment group one cows were abruptly removed from oxytocin at the start of the treatment period. The second group of cows was also abruptly removed from oxytocin at the start of the treatment period but was still pricked with a needle in the parlor when they normally would have been given oxytocin. The third group of cows underwent a weaning protocol. At the start of the treatment period the dose of oxytocin for these cows was dropped from 2mL to 1mL for the first 4 milkings, the dose was then again dropped down to 0.5mL for the next 4 milkings and then finally these cows were removed from exogenous oxytocin. The fourth group of cows was an untreated control. All other procedures in the parlor and milking routine were kept constant and performed by the usual workers. The cows were monitored for a total of 24 consecutive milkings, 12 before the treatment period and 12 after. Milk weight by milking, milk in the first 2 minutes, total milking

time and bimodality were measured for each cow at each milking using International Committee for Animal Recording approved cow-side continuous mass flow meters (Lactocorder®). Each cow served as her own control with the 12 milkings that were recorded before the start of treatment. Milk weight, milk in the first 2 minutes and total milking time were analyzed using a paired t-test and bimodality was analyzed using a chi-squared test. Alpha was set at <0.05.

## Results

Nine total cows were removed from the study, due to culling, removal from the protocol for treatment, or loss to follow up. There were 12 cows in treatment group 1, 16 cows in treatment group 2, 29 cows in treatment group 3, and 20 cows in treatment group 4. All treatment groups showed a significant decrease ( $p < 0.05$ ) in milk weight per milking except for treatment group 4, the control group. Milk production dropped by an average of 6.7, 2.3 and 3.2 lbs/milking/cow for groups 1 through 3, respectively. The milk production for group 4 only dropped by 0.5 lbs/milking/cow with  $p = 0.4$ . For the amount of milk produced in the first 2 minutes of milking only treatment group 2 showed a significant difference ( $p < 0.05$ ) in milk production; this was a decrease in production of 1.5 lbs/milking/cow. Group 1 dropped an average of 1.66 lbs/milking/cow, but this was not significant ( $p = 0.47$ ). Groups 3 and 4 dropped 0.02 and 0.5 lbs/milking/cow respectively, neither of these losses resulted in a significant change. Treatment groups 1 through 3 all had significant rebound in milk production. There were no significant differences in unit on times ( $p > 0.05$ ) or number of bimodal milk flows ( $p > 0.05$ ) for any of the groups.

## Significance

The results of this study show there is a decreased milk production effect when removing cows from exogenous oxytocin treatment. However, the effect did not result in cessation of lactation and milk flow dynamics were not markedly different.