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# Nipple thrush or dermatitis: a retrospective cohort study of nipple-areolar complex conditions and call for coordinated, multidisciplinary care

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## Background

- Nipple thrush in lactating patients is characterized by nipple-areolar complex (NAC) pain, itch, and burning with breast pain.<sup>1,2,3</sup>
- Expert opinion and single clinic chart reviews suggest that most cases of nipple thrush are actually contact or irritant dermatitis, nipple vasospasm, or subclinical mastitis often in the setting of improper breast pump use.<sup>1,2</sup>
- The relationship between breast pump use, symptoms of nipple thrush, and thrush diagnosis has not been examined at the level of a health system.

## Objective

Determine which elements of a lactating patient's clinical presentation, including breast pump use and symptoms, are associated with a diagnosis of nipple thrush.

## Methods

- All NAC complaints of reproductive-age female-identifying patients at UC DMC between 2015 and 2019 were reviewed.
- Data about symptoms, diagnosis, specialty providing care, diagnostic considerations, and treatments were collected.
- Only lactating patients (204 encounters) with NAC complaints were included.

## Discussion & Recommendation

**The preponderance of nipple thrush diagnoses, or potential misdiagnoses, made clinically in the setting of breast pump use in patients with NAC irritation and pain illustrates the need for multidisciplinary, dermatology-involved care for lactating patients.**

## Results

### Main Result

**Patients who used a breast pump were more likely than those who were just nursing to be diagnosed with nipple thrush (Table 1).**

**Table 1. Odds of nipple thrush diagnosis increased with breast pump use**

	OR	95% CI	P value
Nursing only (ref)	-	-	-
Nursing and pumping	11.8	1.3 - 110.1	.03
Pumping only	23.4	2.5 - 218.7	.0006

**Table 2. Pumping patients presented with more NAC pain, itch, burn, and irritation than non-pumping patients.**

Symptom	Total N	No data n (%)	Only nursing n (%)	Nursing/ Pumping n (%)	Only pumping n (%)
Nipple pain	155	27 (17)	25 (16)	50 (32)	53 (34)
Breast pain	83	15 (18)	3 (7)	23 (28)	42 (51)
Nipple & breast pain	70	13 (19)	2 (3)	21 (30)	34 (49)
Itch	23	2 (9)	0 (0)	13 (57)	8 (35)
Burn	17	4 (24)	0 (0)	8 (47)	5 (29)
NAC irritation	80	14 (18)	4 (5)	35 (44)	27 (34)
Nipple & breast pain & NAC irritation	33	5 (15)	1 (3)	13 (39)	14 (42)

1. Thrush was usually (65/66, 98%) diagnosed without microscoping confirmation or fungal culture.
2. Dermatologists were rarely (5, 2%) involved in the management of lactating patients with NAC complaints
3. While nipple dermatitis was a rare diagnosis (14, 7%), NAC irritation was common (80, 39%).
4. Lactating patients (40, 20%) with NAC itch or burn were more often diagnosed with a nipple thrush (23, 58%) than dermatitis (9, 23%).

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## References

1. Betts RC, Johnson HM, Eglash A, Mitchell KB. It's Not Yeast: Retrospective Cohort Study of Lactating Women with Persistent Nipple and Breast Pain. *Breastfeed Med Off J Acad Breastfeed Med* 2021;16:318–24. <https://doi.org/10.1089/bfm.2020.0160>.
2. Douglas P. Overdiagnosis and overtreatment of nipple and breast candidiasis: A review of the relationship between diagnoses of mammary candidiasis and *Candida albicans* in breastfeeding women. *Womens Health Lond Engl* 2021;17:17455065211031480. <https://doi.org/10.1177/17455065211031480>.
3. Jiménez E, Arroyo R, Cárdenas N, Marín M, Serrano P, Fernández L, et al. Mammary candidiasis: A medical condition without scientific evidence? *PLOS ONE* 2017;12:e0181071. <https://doi.org/10.1371/journal.pone.0181071>.