

# Adverse photodynamic therapy prior to plastic surgery of basal cell carcinoma of the nose

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**Introduction & Objectives:** Porphyrin-enriched tumor tissue irradiation with fluorescence excitation system leads to emission of pink-red fluorescence. This principle is used as a diagnostic procedure and is called fluorescence diagnostics (FD) also known as photodynamic diagnostics (PDD). PDD helps to delineate margins of malignant skin lesions prior to surgery or laser ablation (as an alternative to Mohs surgery).



Figure 1. Before FDD

**Materials & Methods:** FDD was applied for nasal BCC 24 hours prior to surgery (Figure 1). 20 percent cream of 5-aminolevulinic acid (ALA) on the tumor and surrounding tissue was applied, after 2 hours cream was cleaned and illuminated with blue light emitting diodes (wavelength 401-405nm). Red-pink fluorescence was observed in malignant tumor, surrounding healthy skin had no fluorescence.

After 15 hours a strong photodynamic reaction was observed (the patient was in a sunny ward). The operation was delayed for 28 days due to a severe erythema (Figure 2).



Figure 2. Strong photodynamic reaction 15 hours after FDD

**Results:** Successful FDT effect on superficial tissues was seen upon arrival, erythema completely eradicated and redness was smaller than before FDD (Figure 3). In the deeper layers, infiltrating BCC cells remain as confirmed by histological examination after successful plastic surgery – nasal reconstruction using a paramedian forehead flap.



Figure 4. 10 months after surgery



Figure 3. 28 days after FDD, erythema completely eradicated and redness smaller

**Conclusion:** FDD is useful for preoperative surgery, laser ablation, or FDT, but strong UV protection is required even when light is transmitted through the window glass. Daylight FDT is not desirable when performing FDD before surgery.