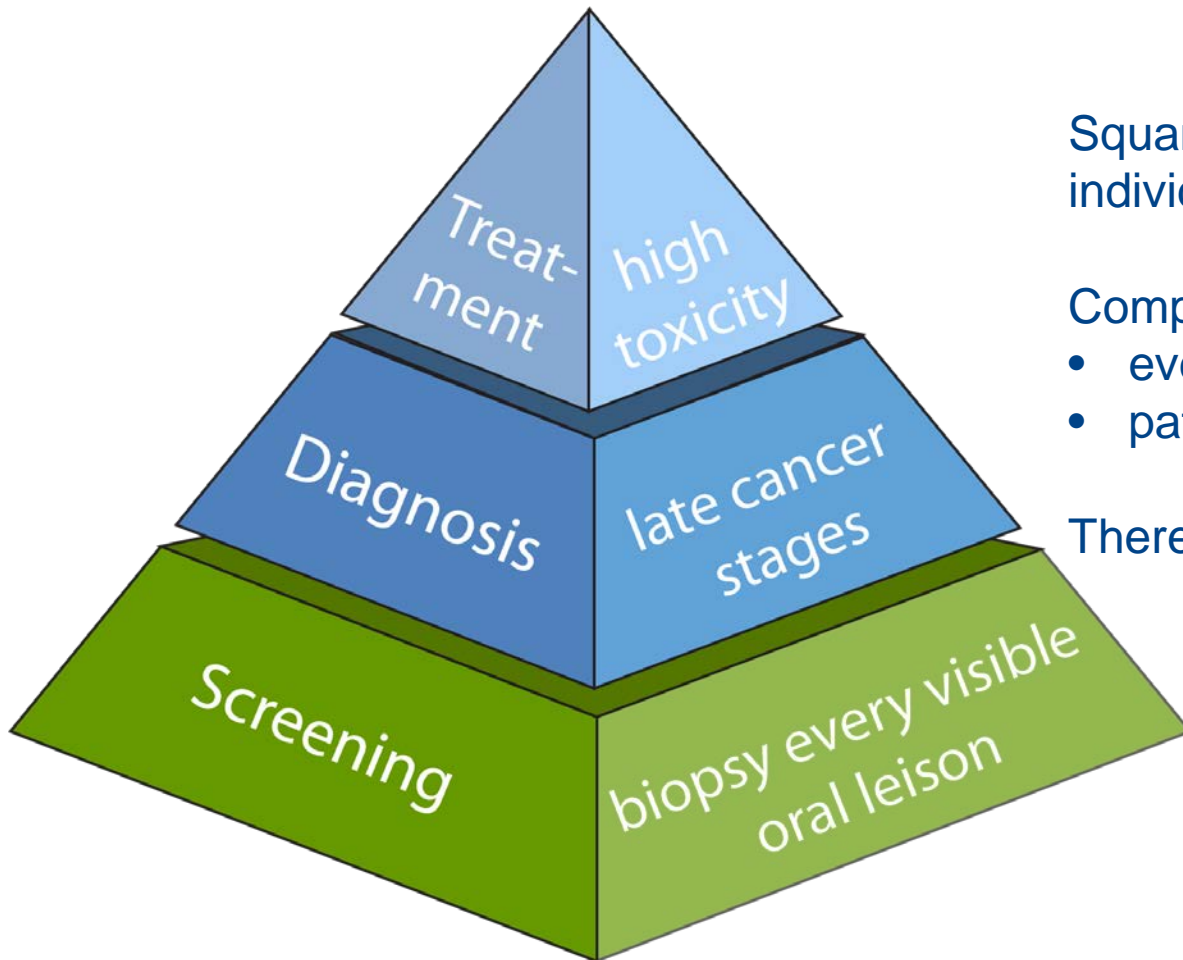


CANCERS BUCCAUX – DÉTECTION ET SOINS

Eunike Velleuer and Christine Krieg



The biggest dilemma of oral squamous cell carcinoma in FA



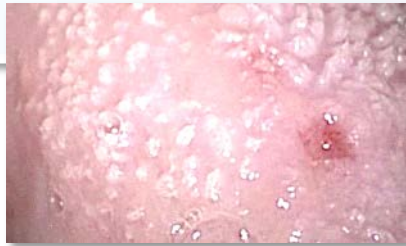
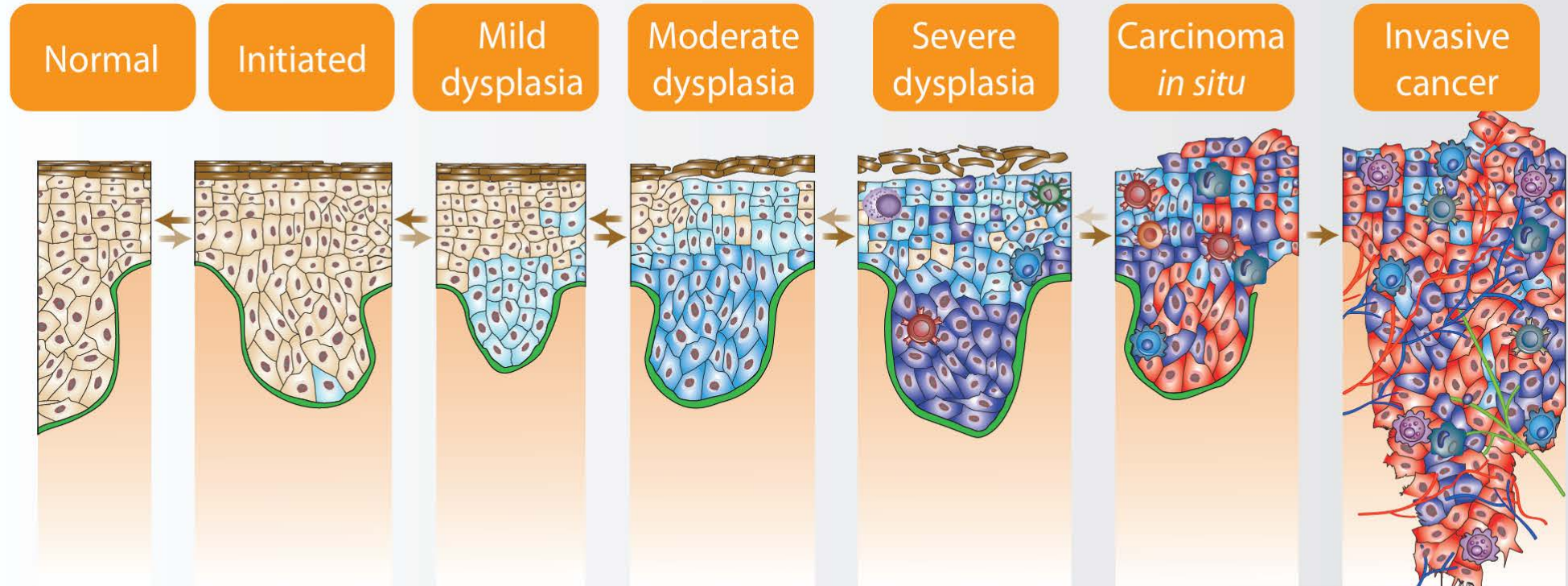
Squamous cell carcinoma is the **leading cause of death** in adult individuals with FA.

Compared to the average population:

- even without the main risk factors the risk is highly increased
- patients present with SCC at an untypical young age

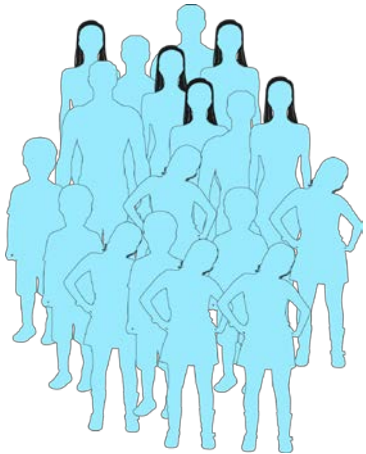
There is a tendency of multiple SCCs in FA

Cancer development

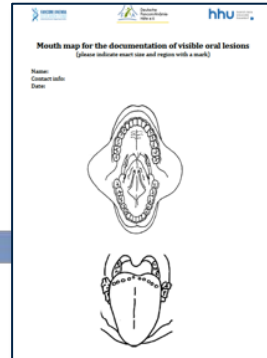


Changing the standard

- 713 individuals with FA
- Individuals have been followed over 12 years
- Collected more than 25,000 oral samples (also longitudinal)



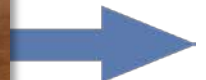
Inspection



Documentation



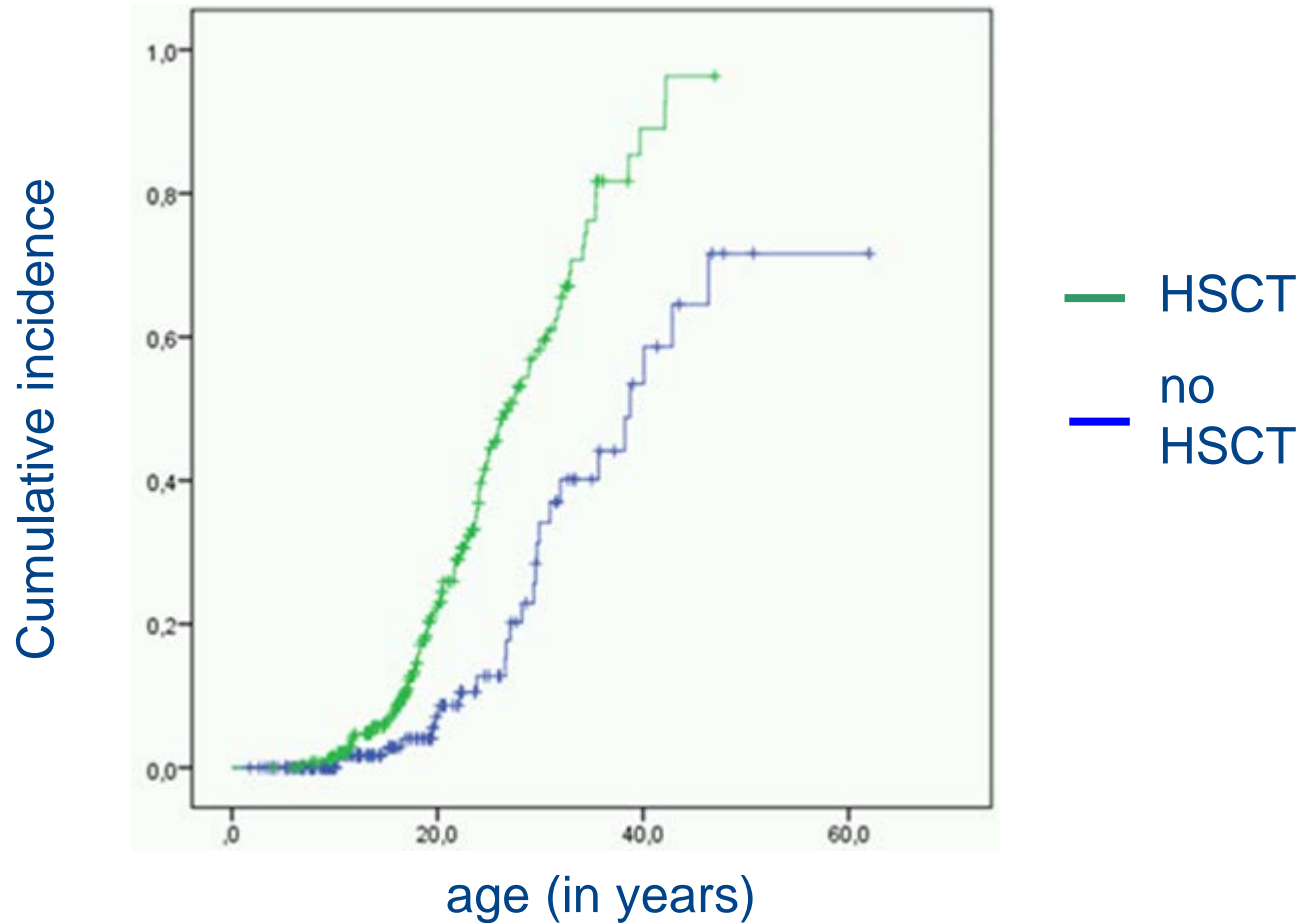
Taking non-invasive samples





Oral lesions in FA

- Visible oral lesions are very **frequent** in FA (1230 lesions in 279 patients)
- Incidence increases with **age**
- Patients with a **HSCT** display a significant higher incidence of visible oral lesions than not transplanted FA patients





Oral brush biopsy has high diagnostic accuracy



Diagnostic Accuracy of Brush Biopsy-Based Cytology for the Early Detection of Oral Cancer and Precursors in Fanconi Anemia

Eunike Velleuer, MD ^{1,2}; Ralf Dietrich, BSc³; Natalia Pomjanski, MD, FIAC¹;
Isabela Karoline de Santana Almeida Araujo, BSc¹; Bruno Eduardo Silva de Araujo, PhD¹;
Iciss Sroka, PhD⁴; Stefan Riesterfeld, MD, PhD, FIAC¹; Alfred Rörking, MD, PhD, FIAC¹

cal follow-up reference standard. **RESULTS:** A total of 737 lesions were suitable for statistical analysis, including 86 lesions with at least high-grade oral epithelial dysplasia in 30 patients. For cytology, the sensitivity and specificity were 97.7% and 84.5%, respectively. Additional analysis of DNA ploidy increased the sensitivity and specificity to 100% and 92.2%, respectively. **CONCLUSIONS:** Careful inspection of the oral cavity of individuals with FA followed by brush biopsy-based cytology

ogy, analysis of DNA ploidy was performed whenever possible. The results were correlated to a long-term clinicopathological follow-up reference standard. **RESULTS:** A total of 737 lesions were suitable for statistical analysis, including 86 lesions with at least high-grade oral epithelial dysplasia in 30 patients. For cytology, the sensitivity and specificity were 97.7% and 84.5%, respectively. Additional analysis of DNA ploidy increased the sensitivity and specificity to 100% and 92.2%, respectively. **CONCLUSIONS:** Careful inspection of the oral cavity of individuals with FA followed by brush biopsy-based cytology appears to identify visible oral, potentially malignant and malignant lesions that warrant treatment. Approximately 63% of SCC and precursor lesions are detected at a noninvasive or early stage. Negative cytology or a lack of DNA aneuploidy can exclude high-grade oral epithelial dysplasia or SCC with high accuracy and thus reduce the need for invasive diagnostic biopsies. *Cancer Cytopathol* 2020;0:1-11. © 2020 The Authors. *Cancer Cytopathology* published by Wiley Periodicals, Inc. on behalf of American Cancer Society. This is an open access article under the terms of the Creative Commons Attribution-NonCommercial-NoDerivs License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.

KEY WORDS: cytology; early detection of cancer; Fanconi anemia; image cytometry; oral cancer; sensitivity; squamous intraepithelial lesions.

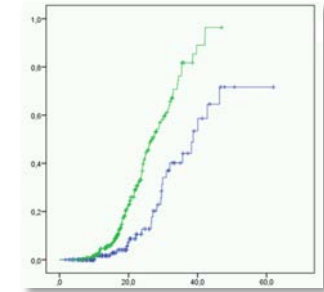
Velleuer *et al.* *Cancer Cytopathol*, 2020



What we have learned performing the non-invasive screening?

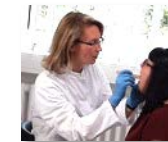


- Oral lesions are **frequent** in FA
- Most of the lesions are **not** malignant or pre-malignant (88% in our cohort)



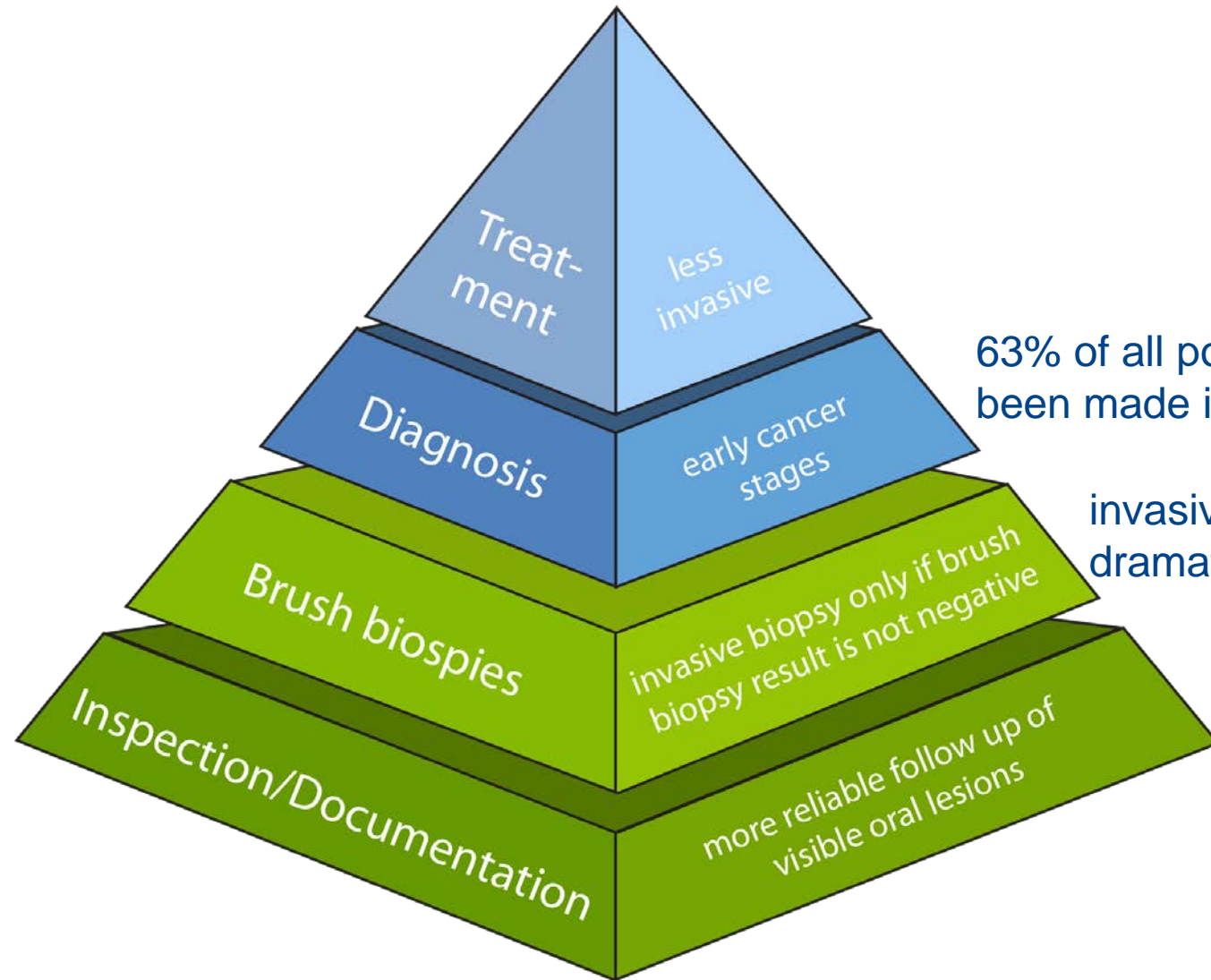
⇒ There is a need for a **first-level screening** to increase patients surveillance

- Oral brush-biopsy based cytology can identify **lesions at risk**
- **Oral screening includes: inspection, documentation, brushing**





A new add-on screening with high diagnostic accuracy



63% of all positive diagnosis have been made in stage I and less

invasive biopsies have been dramatically reduced by 75%



Reducing the burden of Squamous cell carcinoma in Fanconi anemia



Implementation in the
field

Data analysis

Empowerment

Re-use material

How to implement self empowerment



➤ Teaching videos



➤ Graphical material



➤ Personal training

At meetings, homevisits, digital televisits...



➤ FApp



Empowerment – Education



Education and information (fanconi.de/scc_en)

- Video production

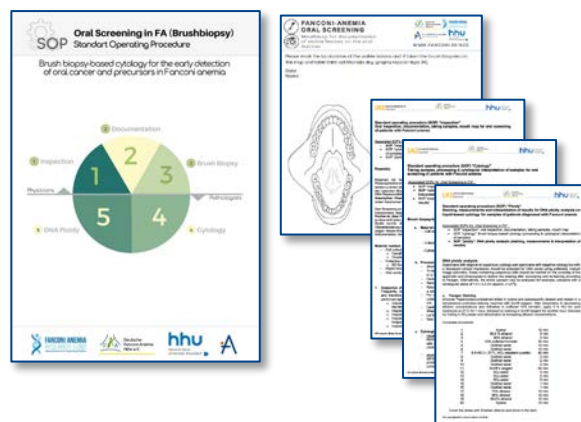
9:33 Image video: overview of cancer risk, results from brush biopsy study

6:05 Hands-on video: how to perform an Add-on screening

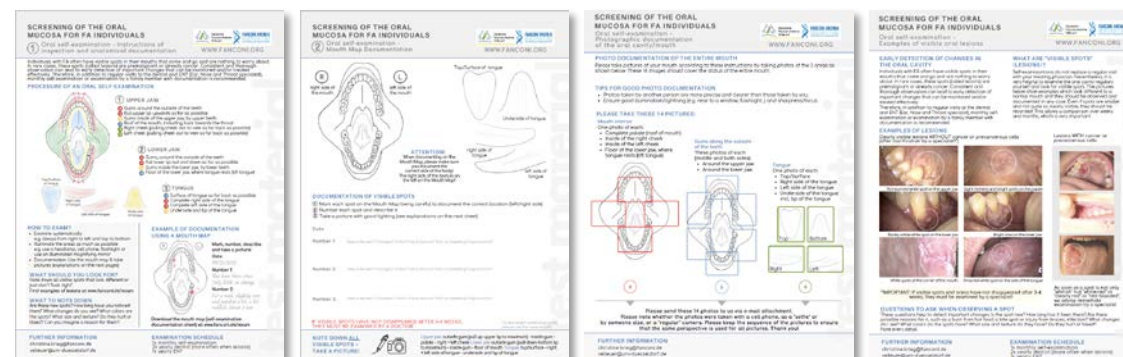
Education and information (fanconi.de/scc_en)

- Video production
- Graphical material

Professionals



Patients



Patient story

June 2016



March 2017



June 2018



4 weeks after surgery