

# THE FUTURE OF TELEDERMOSCOPY COMES FROM ESTONIA ... data says why

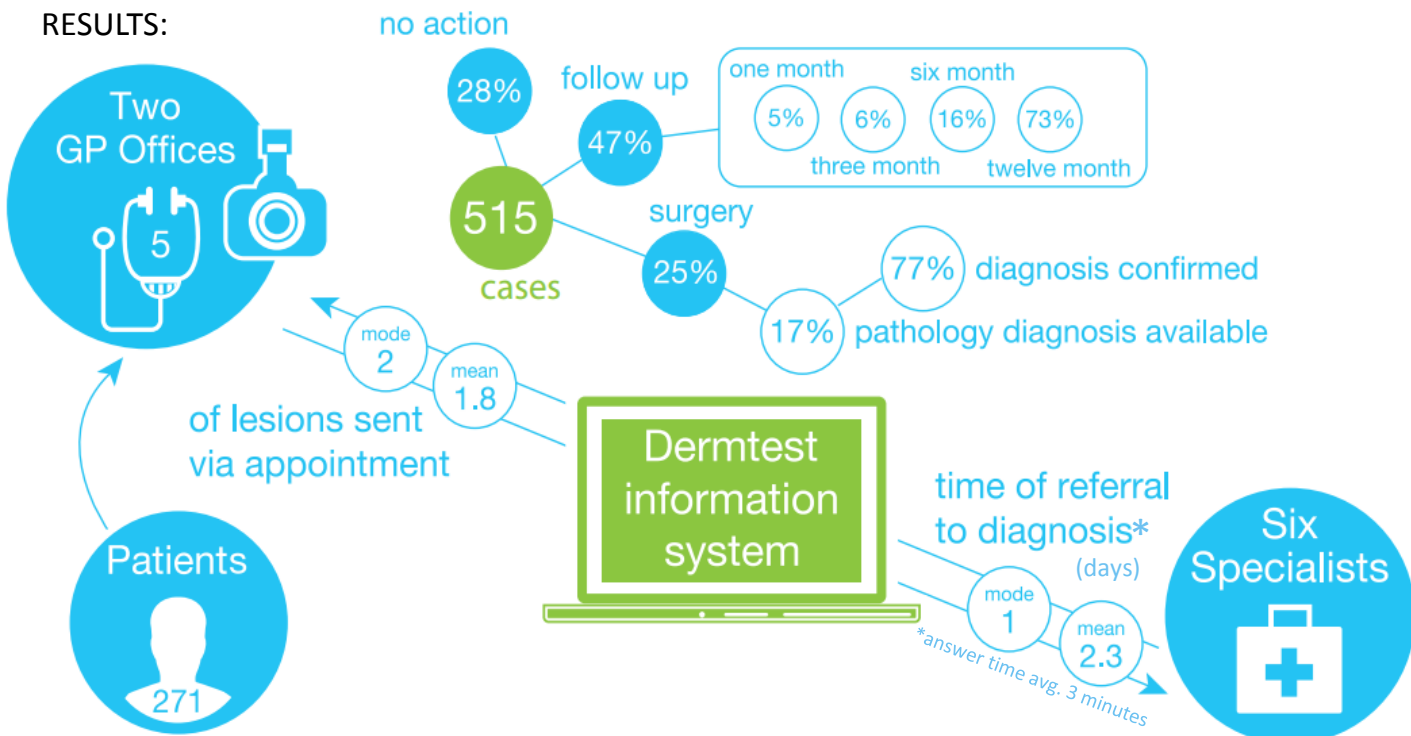
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- Estonian incidence and 5-year survival rates of melanoma < European average
- Long waiting times for specialist expertise
- Need for better prevention, earlier detection and treatment

**OBJECTIVE:** To summarize and assess Dermtest service usage from two remote primary care practices in Estonia in a period of February 8, 2013 until November 23, 2014.

## RESULTS:



### Diagnose group

Diagnose group	no.	%
Melanocytic naevi	301	58%
Seborrhoeic keratosis	101	20%
Neoplasm of uncertain or unknown behaviour of other and unspecified sites	36	7%
Other benign neoplasms of skin	22	4%
Other malignant neoplasms of skin + melanoma	18	3%
Other pigmentation disorders, dermatitis, skin changes etc.	37	7%



Illustrative picture of dermatologist using Dermtest teledermoscopy system

## CONCLUSIONS:

1. Compared to face-to-face appointments Dermtest enables the diagnosis of non-urgent and non-malignant cases in reduced time and in larger quantities.
2. Dermtest reduces waiting times and frees up specialist expertise for relevant cases.
3. Dermtest solution is an effective way for lesion triage.

Abstract for poster presentation in the 4th World Congress of Dermoscopy and Skin Imaging in topic 7: Telemedicine and teledermatoscopy

## **THE MANAGEMENT AND OUTCOMES OF DERMTEST SERVICE IN ESTONIA: A DATA REVIEW.**

Hallik, R<sup>1</sup>., Loite, U<sup>2,3</sup>., Kruus, P<sup>1</sup>., Niin, R<sup>1,3</sup>., Niin, M<sup>3</sup>.

<sup>1</sup> Dermtest OÜ <sup>2</sup> University of Tartu <sup>3</sup> Dermato-oncology Clinic OÜ

**Acknowledgments:** Anneli Rätsep from Primary Care Practice of Tartu University Hospital and Aina Lõõbas from Pärnu Primary Care Practice.

**BACKGROUND:** Estonian incidence and 5-year survival rates of melanoma are lower than the European average and indicate a need for earlier detection. To address this, Dermato-oncology Clinic introduced Dermtest - a store-and-forward teledermoscopy solution. The aim is to provide patients with specialist diagnosis of pigmented skin lesions without the need of a face-to-face visit to a dermatology specialist. This empowers primary care workers to take action in preventing, detecting and treating skin cancer. **OBJECTIVE:** To summarize and assess Dermtest service usage from two remote primary care practices in Estonia. **METHOD:** We analysed the aggregated data of patients referred for teledermoscopy diagnosis in period of February 8, 2013 until November 23, 2014 from Pärnu Primary Care Practice and Primary Care Practice of Tartu University Hospital. A total of 515 case referrals came from 5 GPs. **RESULTS:** The number of lesions assessed per appointment ranged from 1 to 6 with mean of 1,8 and mode of 2. The time from image referral until diagnosis varied from 0 to 13 workdays, with mean of 2,3 and mode of 1. Consultations were provided by 6 dermoscopists from Dermato-oncology Clinic in Tallinn. 11 different diagnose groups were present. 58% of cases were diagnosed as melanocytic naevi. Melanoma and other malignant neoplasms were diagnosed in 19 (3%) cases. In terms of clinical management: 28% of cases did not need further action, 47% were kept for follow-up and 25% were referred to surgery. 2 cases did not include a conclusion. The follow-up periods were 1 month (5%), 3 months (6%), 6 months (16%) and 1 year (73%). Of the 127 cases referred to surgery, pathology confirmed diagnosis data was available for 22 and 77% of teledermoscopy diagnosis were confirmed by pathology report. **CONCLUSIONS:** Dermtest solution is an effective way for lesion triage. Compared to face-to-face appointments it enables the diagnosis of non-urgent and non-malignant cases in reduced time and in larger quantities. As a result, Dermtest reduces waiting times and frees up specialist expertise for relevant cases. However, the lack of pathology data availability to specialists after lesion referrals shows that there is a need to include surgeons and pathologists to the process. This could provide an opportunity for an e-learning platform. The current study should be extended to include analysis on qualitative referral data.

# THE FUTURE OF TELEDERMOSCOPY COMES FROM ESTONIA ... data says why - handout

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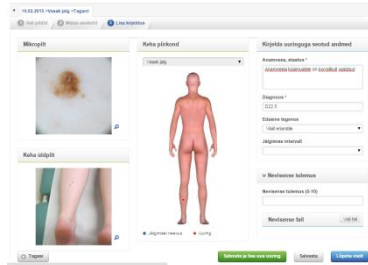
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**METHOD:** We analysed the aggregated data of patients referred for teledermoscopy diagnosis in period of February 8, 2013 until November 23, 2014 from Pärnu Primary Care Practice and Primary Care Practice of Tartu University Hospital. A total of 515 case referrals came from 5 GPs.



Illustrative picture of doctor taking dermoscopy pictures on a patient

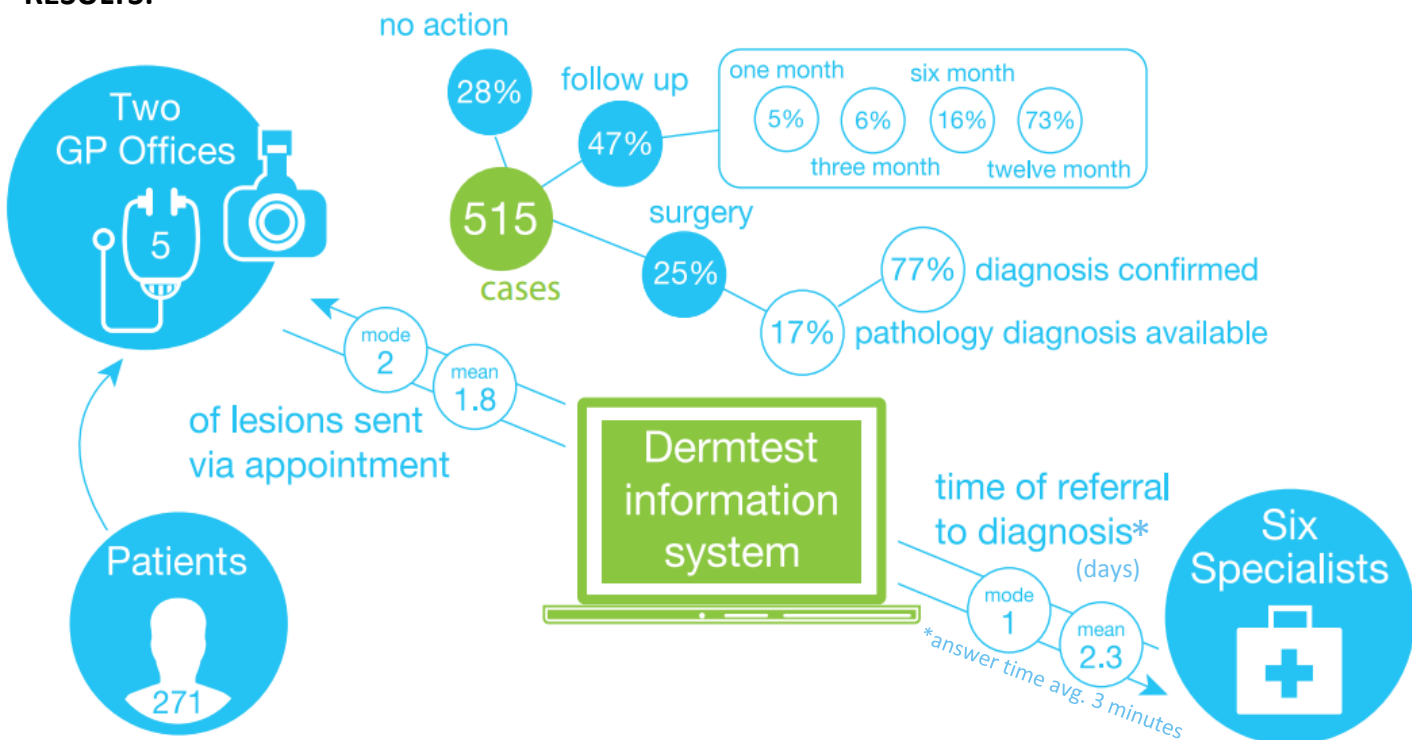


Illustrative picture of Dermtest information system view for consultation referral



Illustrative picture of dermatologist answering teledermoscopy consultation referral

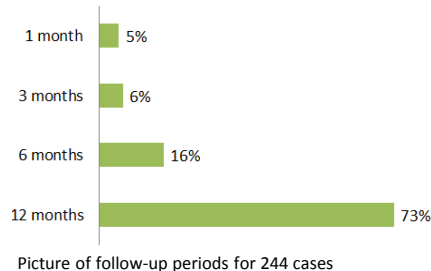
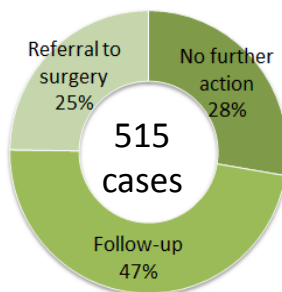
## RESULTS:



## RESULTS EXPLANATION AND DETAILS:

- The number of lesions assessed per appointment ranged from 1 to 6 with mean of 1,8 and mode of 2. The time from image referral until diagnosis varied from 0 to 13 workdays, with mean of 2,3 and mode of 1. Consultations were provided by 6 dermatologists from Dermato-oncology Clinic in Tallinn. Average dermatologist teleconsultation answer time for one nevi was 3 minutes.

- Out of 515 cases 142 did not need further action, 244 were kept for follow-up and 127 were referred to surgery. 2 cases did not include a conclusion.
- The follow-up periods were 1 month (13 cases), 3 months (14 cases), 6 months (40 cases) and 1 year (177 cases).



- 11 different diagnose groups were assigned and are presented below.

Diagnose group	no	%
Melanocytic naevi	301	58%
Seborrhoeic keratosis	101	20%
Neoplasm of uncertain or unknown behaviour of other and unspecified sites	36	7%
Other benign neoplasms of skin	22	4%
Other malignant neoplasms of skin	14	3%
Other disorders of pigmentation	12	2%
Haemangioma and lymphangioma, any site	10	2%
Skin changes due to chronic exposure to nonionizing radiation	10	2%
Other dermatitis	5	1%
Malignant melanoma of skin	3	1%
Melanoma in situ	1	0%
Total	515	100%

- Of the 127 cases referred to surgery, pathology confirmed diagnosis data was available for 22 and 77% of teledermoscopy diagnosis were confirmed by pathology report.

### Pathology diagnosis data for cases referred to surgery

Teledermoscopy diagnosis	Pathology confirmation	Other diagnosis by pathology	Other diagnosis explanation	Total
Melanocytic naevi	4	2	C43 (malignant melanoma of skin) D23 ( other benign neoplasm of skin)	6
Malignant melanoma of skin	1	0		1
Other malignant neoplasms of skin	5	0		5
Neoplasm of uncertain or unknown behaviour of other and unspecified sites	6	3	3x D22 (melanocytic nevi)	9
Seborrhoeic keratosis	1	0		1
Total	17	5		22

## CONCLUSIONS:

- Compared to face-to-face appointments Dermtest enables the diagnosis of non-urgent and non-malignant cases in reduced time and in larger quantities.
- Dermtest reduces waiting times and frees up specialist expertise for relevant cases.
- Dermtest solution is an effective way for lesion triage.