

The **EFFECTIVENESS** of a
**SPECIAL PROTECTIVE
CREAM**
for
INCINERATION PLANT WORKERS

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SITUATION 1

Among a group of 112 incineration plant workers in the Fernwärme Wien the effectiveness of a special protective (DPI Prima Derm®) was tested during 12 months.

SITUATION

2

For financial reasons a controlled group testing was rejected by the company.

SITUATION

3

Tested were:

- Epidermal water content
- Transepidermal water loss
- Colour of the skin
(by approximate measurements for Melanin and Erythrocyte content)
- ph-value
(tested with an MPA-tester [Multiprobe Adapter System])

QUESTIONS

- Are the expected improvements correlated with the skin type
(colour of: - skin
- hair
- eyes)
- Is there a different result in cases of systemic diseases
(such as: - diabetes mellitus
- allergic and
- chronic skin diseases)

METHODS

1

At the end of the treatment 34 workers reported that they had failed to use the protective regularly.

METHODS

2

The other 78 workers were subjected to a cluster analysis as a result of which a three cluster solution was striking:

- Cluster I (n= 23): dark hair and skin
- Cluster II (n= 37): fair–skinned with brown hair
- Cluster III (n=18): fair–skinned, blond, blue eyes.

METHODS

3

In order to avoid error

in the variance of samples

we calculated the efficacy.

RESULTS

1

- The **epidermal water content** was very **high** (mean value 83),
obviously due to the use of an acidic hand wash, containing cosmetic care products which had been used for several years whereas
- The **transepidermal water loss** was bordering on the range of “**damaged skin**”.

RESULTS

2

- Measurements of **Melanin** showed an **increase** in the whole group (+22%)

and

- **Initial erythema** returned to normal (16%).

RESULTS

3

- **Systemic effects** could be **seen when splitting** the group into:
 - people with allergies and
 - people with different skin types.
- In both groups the **initial differences** between:
 - burdened and
 - unburdened skin**balanced out after treatment.**

CONSEQUENCES 1

The tested **protective cream** can be **recommended** especially for:

- fair – skinned people and
- people with allergies

CONSEQUENCES 2

Its effect **could also be seen in people** who were already **well protected** because of the regular use of:

- gloves and
- an acidic hand wash
containing cosmetic care products for several years.