PRESS RELEASE

52nd Congress of the Spanish Association of Dermatology and Venereology

Symposium

All hands on deck to define the balance between benefits and risks of sun exposure

Henry Lim captured the spirit of the symposium 'What's new in protection from sun exposure?' with his quest for the balance between the yin and yang of spending time outdoors while following evidence-driven, personalised prevention advice. Salvador González, Susan Taylor, Daudí Rajabu and Yolanda Gilaberte joined in to provide attendees with the final touches of an updated picture of the latest findings and their impact on clinical practice when it comes to finding our patients' place in the sun.

Coordinated by Henry Lim, President of the International League of Dermatological Societies (ILDS); José Aguilera Arjona, from the Department of Medicine and Dermatology at the University of Málaga, and Yolanda Gilaberte, President of the Spanish Academy of Dermatology and Venereology (AEDV), the symposium addressed the crucial question of to what extent and in what manner we can promote the best lifestyle regarding sun exposure, maximising its benefits while, at the same time, reduce risk as much as possible.

The session included a brief, endearing ceremony to mark the appointment of Susan C. Taylor as Honorary Member of the AEDV.

Salvador González Rodríguez (Ramón y Cajal University Hospital, Madrid) was the first speaker, with an initial focus on the best known deleterious effects of sun exposure (DNA damage, pigmentation, inflammation, immunosuppression, photoaging and skin cancer) and pointing out exposome-related risk factors such as pollutants, including smoke from combustion engines and tobacco use which, as he warned "can act as photosensitising agents".

González discussed how an optimal VDR (vitamin D receptor) status, essential at the skin level, has been linked to the prevention of cardiovascular and metabolic disorders, infectious processes and cancer.

In his speech, he pointed out to socioeconomic factors as one of the elements to be considered in terms of photoprotection, offering a glimpse of the complex

scenario where these, together with occupational, genetic and environmental circumstances intervene.

If not directly, this holistic perspective led to the recommendation of personalised, tailored photoprotection, first mentioned on the day by **Susan Taylor, president of the American Society of Dermatology**, and soon becoming one of the highlights of the symposium, as fellow speakers subsequently declared their commitment to this particular approach.

Whereas 43% of U.S. dermatologist reported that they never, rarely or only sometimes take patients' skin type into account when making sunscreen recommendations, Taylor invited the audience to consider discussing photoprotection with their patients based on Fitzpatrick skin type susceptibilities, risk of burning, underlying cutaneous disorders, aesthetic considerations and personal preferences, lifestyle and extent of exposure (e.g. workplace) and geography (including temperature and humidity) for a culturally competent joint-decision making process.[1]

Taylor's remarks, even as part of a speech looking into the latest evidence on personalised photoprotection for patients of colour, resonated amongst fellow clinicians as a clinical practice worth exploring and implementing in all patient populations.

She said: "We have learnt a lot recently about the role of visible light (VL), and a substantial part of what we have seen has been evidence from Lim's lab (referring to Henry Lim, also a speaker)[2]".

Genetics, medication and exposure to radiation activate melanogenesis. Visible light (VL), which accounts for approximately 50% of the sunlight reaching the Earth's surface, increases skin darkening in darker skin tones. Additionally, UVA, UVB and VL all have chronic effects, she noted.

Addressing photoprotection ad prevention of pigmentation, she said that a blend of iron oxides and non-micronised pigmentary titanium dioxide can reduce VL transmission "by 90%". In patients with melasma, it has been found that protection from VL, added to conventional sunscreen, substantially improves the MASI (melasma area and severity index) score.

Additional methods of protection include antioxidant-blend sunscreen, specifically antioxidant containing vitamin E (0.25%), vitamin C (0.025%), licohalcone A

(0.025%), glycyrrhetinic acid (0.01%), and diethylhexyl syringylidene malonate (0.5%).

Going back to patients with skin of colour (SOC), Taylor recommended explicitly dispel the myth that they do not need sunscreen, highlight how poor sunscreen adherence may be relevant to their current dermatology visit, strongly recommend tinted sunscreens and follow up with the patient at the next visit to address concerns.

In her speech, she emphasised the importance of heat and melanogenesis, underlying the crucial role of counselling patients about cooling and heat protection in addition to photoprotection.

Taylor even addressed socio-economic factors to be considered, as the estimated cost of daily sunscreen use in peak sunshine hours can be as high as $3,094 a year, which the speaker called “prohibitive”. “For patients who used sunscreen daily and wore long sleeves, long pants, hats and practiced sun avoidance during peak hours, the estimated annual expense lowers to $249-$292”.

“For all our patients we want a comprehensive plan, not only sunscreen, even if it has increased importance”, she concluded.

It was the turn **of ILDS president Henry Lim**, from Henry Ford Health and Michigan State University, to address the audience, something he did with the burning question of ‘The yin and yang of sun exposure: Where is the balance?’

Starting with the photobiologic effects of sunlight, he pointed out at UVB and UVA2 as cause of erythema and photocarcinogens; UVA1 as cause of tanning, photoaging and photocarcinogenesis and VL as cause of erythema and tanning, as shown in recent studies.

Regarding the beneficial effects of sunlight, a topic which “has been around for some time”, some of them are well established whereas others are pending further data. However, even recent preliminary data should be considered with patients in mind, he suggested.

One of the most established ones is vitamin D synthesis (UVV spectrum and, as noted by Dr. Taylor, very little exposure needed). “Many of us also know about the benefits for mental health”, detailed in navy personnel and as suggested in the positive association between sun exposure and mental health among 787 OR

nurses.3,4 Bibliography is abundant on this topic, some of the most recent ones were highlighted, he clarified.

From a different perspective, a higher risk of developing depression has been linked to reduced duration of sunshine hours.

A lot of the discussion has been stimulated by thoughts expressed by Richard B. Weller in his article 'Sunlight: Time for a Rethink?' in the Journal of Investigative Dermatology in August 2024. Weller argued that sun exposure has been linked to reduced all-cause, cardiovascular and cancer mortality. Multiple trials of oral vitamin D supplementation show little benefit, however, with growing evidence showing that sunlight has health benefits through vitamin D-independent pathways such as photomobilisation of nitric oxide. "This is his opinion, but it is something we need to be aware of", Lim noted.

UV associated benefits, as suggested by numerous trials, include the reduction of all-cause mortality (by multiple mechanisms), blood pressure (nitric oxide, not vitamin D), cardiovascular disease (again, nitric oxide, not vitamin D), type 2 diabetes, multiple sclerosis and covid (by unknown mechanisms, but vitamin D independent), cancer mortality -progression of some tumours- and rickets (both by vitamin D).

Being a dermatologist, Weller did discuss UV-associated downsides, namely DNA damage and free radical generation, and UV hazards such as skin cancer, photoaging and photodermatoses, combined with the notion that skin colour determines the degree of this risk-benefit relationship.

The analysis of data from the UK biobank (over 300,000 subjects) by the same research group suggested that higher ultraviolet light exposure is associated with lower mortality.

In summary, the beneficial effects of sunlight are vitamin D, mental health and multiple health status, including cancer and all-cause mortality, cautioning that there are limitations to the available evidence based on modelling of sunlight exposure.

To advise patients in a realistic, evidence-based fashion would entail recommending use of shade, sunscreens, clothing, hats, sunglasses and non-topical agents as means of protection. "As previous speakers said, the whole package of photoprotection goes beyond sunscreens, this is an important

message to be aware of, particularly when approached by the media. Remaining indoors is not good advice, but doing it in a smart manner certainly is", he said.

Towards the end of his speech, the speaker returned to the key idea of personalised photoprotection which all participants declared to share. In Lim's case, the 'skin interactome' was the reminder of how multiple factors are at play in photoprotection, sunlight, beauty routines, pollution, nutrition, sleep, genetics, skin microbiome, gut microbiome, hormones, gender and race, to name some.

He invited attendees to join him in the 26th World Congress of Dermatology 2027, to be held from June 21st to 26th in Guadalajara (Mexico), "thanks to the hard work of Jorge Ocampo (Mexican Society of Dermatology) and Mariel Isa (Dominican Society of Dermatology)".

Yolanda Gilaberte, AEDV president, was in charge of discussing a "common concern", which is the impact of climate change on human health, with a focus on skin health.

She quoted evidence from a review of its consequences on infectious dermatoses (bacterial, fungal, viral and parasitic), heat-related conditions, autoimmune and inflammatory dermatoses, contact dermatitis, psychodermatosis, trauma and related-exposure dermatoses, nutritional deficiencies and cutaneous malignancies.[5]

Focusing on cancer, she presented the direct relationship between the ozone layer and cancer, portraying the Montreal protocol as an example of effective joint action for the better protection of health. Temperature was an additional consideration as linked to tumours, as more days of temperatures above 24º have been linked to an increased number of cancer surgeries.

Occupational hazards and the exposome of skin cancer were some of the other topics in AEDV president presentation, leading to the conclusion that the use of multiple protection tools (clothes, attention to weather forecasts and use of newer technologies – AEDV's mobile app) and a personalised, customised approach are the most efficient measures. In her case, temperature, humidity and pollution were additional elements to be aware of, and vulnerable populations (medicated, elderly, children, outdoor workers) one of the main focuses.

She also invited attendees to join in the CILAD (Ibero-Latin American Dermatology Congress) meeting in Oporto (Portugal) from October 28th to 31st 2026 and support Madrid's candidacy to hold the 2031 World Congress of Dermatology.

Daudí Rajabu Mavura, principal of the Regional Dermatology Training Center (Tanzania), addressed in the session the clinical and genetic profiling of 89 xeroderma pigmentosum (XP) patients in Tanzania.

XP is a rare genetic disorder caused by inherited mutations in gene-encoding proteins that play critical roes in nucleotide excision repair of DNA damage and transcription of mRNA, with 8 different subtypes based on the affected genes, ranging from XP-A to XP-G and V variant, with A and C as predominant.

It affects about 1/100,000 people globally. However, the prevalence and incidence of XP subtypes in East Africa (including Tanzania) are yet to be known.

A particularly high prevalence, dramatic clinical outcome (mortality from skin cancer in young children without access to healthcare), sun exposure without protection and social exclusion were some of the reasons to carry out this analysis, together with the fact that Tanzania has one of the few training centres in the field in Sub-Saharan Africa.

A specific XP program has been established to predict the early occurrence of tumours and prevent them via screening and early intervention.

The clinical presentation of XP in Tanzania would be described in a cohort of 30 patients, with mean age of onset at 5 months old and photophobia followed by skin changes as most frequent initial symptoms. Others include conjunctival injection, ectropion, lip dysplasia, lentigines, skin hypopigmentation and corneal opacity.

The cohort was characterised by a high prevalence of tumours (87,9%), with a mean age of onset of 3,6 years old and a high number of tumours per patient (66,7%).

Mavura's team performed whole exome sequencing (WES) on 92 patients (92), blood samples from patients' parents (28) and blood samples from healthy individuals. A homozygous mutation in a splice site of XPC protein was identified, already documented in other regions of the world and Africa (Comoros Islands, South Africa).

It was observed that most patients (90%) shared the same homozygous mutation in the XPC gene. However, clinical presentations and severity differed.

In a new study of samples obtained in 2024, including 26 individuals (40 patients and 6 healthy parents) the researchers found that XPC splice mutation induces a total loss of XPC expression.

This led for the question of whether the phenotypic variability is due to underlying differences in genotype or if it is linked to environmental factors and the next steps, namely the generation of a clinical score to categorise patients by severity and the correlation of the phenotype (clinical score) with the genotype and expression level of XP genes.

There are currently two clinical scoring systems, namely the XPA-symptoms-oriented one developed by Tanioka's team in Japan and the British score, which the speaker referred to as "more appropriate for XPC phenotypes, but based on sunlight exposure patters of the Northern Hemisphere.[6,7]

Mavura supports the development of an African score based on published score and specialists' clinical opinions, cross-validated by bioinformatical analysis and aimed at the specificities of this population.

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