

# Blood donation and dermatology: What a dermatologist should know?

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## Abstract

Blood donation is an act of benevolence that significantly improves lives and fosters better health outcomes globally. Certain skin diseases and medications make an individual temporarily or permanently ineligible to donate blood. This article aims to elucidate the relationship between skin diseases, medication, and blood donation deferral periods, empowering individuals to make informed decisions and contribute to this life-saving endeavour.

**Key words:** blood donation, dermatology, medication, deferral periods

## Introduction

Blood donation is an act of benevolence that significantly improves lives and fosters better health outcomes globally.<sup>1</sup> According to the Central Drugs Standard Control Organization (CDSCO), blood is categorised as both a biologic and a drug.<sup>2</sup> Consequently, blood donor centres, blood banks and transfusion services are required to adhere to all regulations on biologics and drugs.<sup>2</sup> However, certain skin diseases and medications make an individual temporarily or permanently ineligible to donate blood. As dermatologists, it is crucial to guide patients on factors that necessitate deferral from blood donation. Recognising and understanding such deferral periods is important for upholding the safety and effectiveness of donated blood and as a holistic approach to patient care.<sup>1</sup> This article aims to elucidate the relationship between skin diseases, medications and blood donation deferral periods, empowering individuals to make informed decisions and contribute to this life-saving endeavour.

There are three supranational agencies with treaty-defined powers: the World Health Organisation(WHO), the

Pan-American Health Organisation (PAHO) and the Council of Europe.<sup>1</sup> The WHO advocates for robust governmental leadership in establishing national transfusion networks.<sup>1</sup> In developed countries, national systems are often observed, many of which are operated by the International Red Cross and receive government subsidies.<sup>1</sup> The WHO's involvement in blood transfusion is particularly influential in countries with medium and low development indices.<sup>1</sup> Its strategy focuses on promoting national policies centred around a nationally co-ordinated blood transfusion service that is accountable to the government.<sup>1</sup> The dual purpose of blood donor screening is to minimise risks for both the blood recipient and the donor.

The Ministry of Health & Family Welfare, Government of India (GOI), publishes the Transfusion Medicine Technical Manual through the National Blood Transfusion Council (NBTC) with technical support from the WHO periodically, the latest being published in 2022 to encourage uniform implementation of standards and consistency in the quality and safety of blood and blood products.<sup>2</sup>

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WHO has categorised blood donor’s conditions based on selection criteria into four broad categories:

1. Conditions that are acceptable
2. Conditions that require temporary deferral for defined periods
3. Conditions that require permanent deferral
4. Conditions that require individual assessment<sup>1</sup>

In other words, donors who don’t fit the requirements for selection ought to be temporarily or permanently deferred.<sup>1</sup> They should be informed whether the deferral is intended to protect their own health, the recipient’s health or both.

We compared the latest guidelines from the GOI and the WHO concerning donor deferral criteria related to skin diseases, dermatological procedures and medications used in dermatology. Additionally, we reviewed pertinent literature on blood donation in dermatology, including guidelines from the United States, Europe, the United Kingdom, and Brazil, to analyse the impact of specific skin conditions and medications on eligibility for blood donation.

From a dermatologist’s perspective, the deferral period for blood donation can be understood in the following three contexts:

1. Blood donation and skin diseases
2. Blood donation and procedures
3. Blood donation and medication

**1) Blood donation and skin diseases**

The suitability of prospective donors with skin diseases should be assessed if the skin condition reflects an underlying systemic disease, poses a risk of infection or if the donor is undergoing medication. According to WHO guidelines for blood transfusion, blood donation should be temporarily deferred if the venepuncture site is affected, the disease is severe or in the presence of secondary infection.<sup>3</sup> While it’s impractical to enumerate all dermatologic diseases, we have summarised relevant conditions in Table 1.<sup>1,2,4-8</sup>

**Infections**

According to European guidelines of blood donation:

- For infections where the infectious agent has been completely cleared from the donor’s blood upon recovery, the donor should be deferred from donation until they are no longer infectious, typically two weeks after symptoms have ceased.<sup>9</sup>
- If a donor has had known contact with an infectious agent, they should be deferred for a period approximately twice the length of the incubation period. When there is a geographical risk of exposure to multiple infectious agents, the longest deferral period applies.<sup>9</sup>
- Many transfusion-transmissible infections have defined geographical limits, and the risk of transmission can be minimised by temporary deferral or testing donors traveling from affected areas.<sup>9</sup>

The existing literature does not provide clear guidelines for managing household contacts of individuals with leprosy.

**Table 1: Dermatologic diseases and deferral guidelines as per recommendations from GOI, WHO and other regulatory bodies**

Dermatological diseases		Deferral period			
		GOI <sup>2</sup>	WHO <sup>1</sup>	Others	
Infections	Tuberculosis	Active infection	Two years following confirmation of cure	Two years following confirmation of cure	
		Latent infection			Seven days after completion of last dose of antibiotic therapy <sup>4</sup>
		Household contacts		Defer until screened and confirmed clear of infection	
		positive tuberculin skin test or blood test, but no active tuberculosis			Acceptable <sup>5</sup>
	Leprosy	Active infection or cured cases	Permanently		
		Household contacts			Should be deferred*
Leishmaniasis	Active infection	Permanently	Permanently		
	Individuals coming from endemic area		Defer for 12 months since last return from endemic area		
Filariasis				Permanently <sup>7</sup>	
Chagas disease	Active infection		Permanently		
	Individuals coming from endemic area		Defer for six months since last return from endemic area		

(Contd...)

Table 1: (Continued)

Dermatological diseases		Deferral period		
		GOI <sup>2</sup>	WHO <sup>1</sup>	Others
Measles, Chickenpox, Rubella	Patients	Fourteen days following full recovery	Fourteen days following full recovery	
	Close contacts		Three weeks following the last day of close contact	
Dengue, Chikungunya		Six months following complete recovery	Six months following complete recovery	
Herpes labialis/cold sores			Twenty-eight days following full recovery	
Herpes zoster				Six months due to potential association with malignancy and HIV infection <sup>7</sup>
Cutaneous warts				Acceptable <sup>8</sup>
Scabies			Defer till all lesions get cleared to avoid risk to blood collection staff	
Superficial fungal infection			Defer till all lesions get cleared to avoid risk to blood collection staff	Defer for seven days after completing systemic anti-fungal therapy <sup>4</sup>
Paracoccidioidomycoses	Systemic			Permanently <sup>7</sup>
	Pulmonary			Five years <sup>7</sup>
Mucosal candidiasis				Defer if it is associated with underlying immunosuppression and received systemic therapy within the last seven days <sup>4</sup>
Pre-malignant and malignant skin conditions	Basal cell carcinoma, Bowen's disease (Squamous cell carcinoma in-situ)		Accept if successfully treated and in good health	
	Malignant melanoma, Kaposi's sarcoma, Mycosis fungoides, Invasive squamous cell carcinoma	Permanently	Permanently	
Autoimmune connective tissue disorders	Systemic lupus erythematosus, Scleroderma, Dermatomyositis	Permanently	Permanently	
Autoimmune vesiculobullous disorders	Pemphigus group of disorders, Pemphigoid group of disorders			Permanently <sup>8</sup>
Other skin conditions	Porphyrias			Permanently <sup>8</sup>
	Lichen planus			Six months (concern about Hepatitis C) <sup>7</sup>
	Hidradenitis suppurativa			Permanent <sup>5</sup>
	Alopecia areata			
	Vitiligo			
	Psoriasis			
	Atopic dermatitis			
	Urticaria			
			Acceptable if the condition is not severe, there is no systemic involvement and the patient is not on immunosuppressive therapy <sup>7,8</sup>	

\*Household contacts of leprosy patients from endemic areas should be deferred from donating blood if screening for anti-PGL-1 IgM antibodies and *Mycobacterium leprae* DNA is not available. GOI: Government of India.

However, a study conducted by Goulart *et al.*<sup>6</sup> in Brazil (an endemic region for leprosy) examined blood donors without prior contact with the disease. The study found that 3.8% of these donors tested positive for anti-phenolic glycolipid

1 (PGL-1) IgM antibodies and 0.3% were positive for *Mycobacterium leprae* DNA. Over a five-year follow-up, 14.6% of those who initially tested positive developed leprosy. Given the continuous exposure to lepra bacilli, household

contacts are at a higher risk of developing leprosy compared to the general population. Therefore, we recommend that household contacts of leprosy patients from endemic areas should be deferred from donating blood if screening for anti-PGL-1 IgM antibodies and *Mycobacterium leprae* DNA is not available.

Certain diseases require permanent deferral. India is still an endemic country for leprosy, leishmaniasis and filariasis. Because of increased individual susceptibility and possible reinfection, patients who have been treated for these diseases are permanently deferred according to the current Indian guidelines.<sup>2</sup>

#### **Premalignant and malignant skin conditions**

As most of the malignant conditions spread to distant sites (metastasis) either through blood or lymphatics, and even a single neoplastic cell can seed a tumour, patients having a history of malignant conditions are permanently deferred.<sup>5</sup> However, exceptions are made for basal cell carcinoma (rodent ulcer), which is locally invasive and does not spread through the blood, and Bowen's disease (squamous cell carcinoma in situ), which remains confined to the epidermal basement membrane.<sup>5</sup> Consequently, individuals who have been cured of these conditions can safely donate blood.<sup>4,7</sup>

#### **Autoimmune conditions**

Individuals with autoimmune conditions such as systemic lupus erythematosus, scleroderma, dermatomyositis and disorders within the pemphigus or pemphigoid groups are permanently deferred from donating blood.<sup>5,7</sup> These patients typically require long-term immunosuppressive medications, which increase their susceptibility to infections. Additionally, they often have multisystem involvement, and donating blood can jeopardise their health condition.<sup>7</sup>

#### **Porphyrias**

Patients with acute porphyrias, such as variegate porphyria and hereditary coproporphyria, may be associated with skin lesions in addition to increased levels of blood porphyrin irrespective of acute attacks.<sup>7</sup> Since the recipient of the blood may theoretically get skin lesions, they are disqualified if they already have active skin lesions.<sup>7</sup>

Porphyria cutanea tarda is an acquired condition associated with underlying liver disease, often viral hepatitis B and C (HBV, HCV) or of unknown origin. They are disqualified due to ethical guidelines prohibiting donors from receiving direct or indirect benefits.<sup>1</sup> Therefore, therapeutic phlebotomy, which benefits the donor, could potentially compromise the reliability of the donor interview and the safety of the blood recipient due to the possibility of inaccurate risk behaviour disclosure.<sup>4,5</sup> Moreover, there exists a risk of transmitting HBV and HCV.

In erythropoietic protoporphyria and congenital erythropoietic porphyria, patients are often anaemic.<sup>4</sup> Additionally, the

presence of porphyrins in red blood cells reduces their lifespan and renders the blood unsuitable for donation.<sup>4</sup>

In summary, any individuals suffering from porphyrias are permanently deferred from donating blood.

#### **Sexually Transmitted Infections and Human Immunodeficiency Virus Infections**

Certain sexually transmitted infections (STIs) can also be transmitted through blood. Therefore, screening and deferring individuals who may be affected is crucial.<sup>5</sup> Additionally, sexual contact may necessitate deferral.<sup>1</sup>

*Treponema pallidum*, the causative organism of syphilis, is released into the bloodstream intermittently during infection and destroyed within 72 hours of storage at 40°C.<sup>1</sup> Therefore, the risk of transmission of syphilis through the transfused blood is low. However, it can still be transmitted through fresh blood and platelets.<sup>1</sup> While a recent Indian guideline mandates a deferral interval of one year following the date of cure, WHO still suggests permanent deferral of affected individuals.<sup>1,2</sup>

*Neisseria gonorrhoeae*, the causative organism of gonorrhoea, is not transmissible through blood transfusion.<sup>1</sup> Despite this, many national and WHO guidelines mandate a temporary deferral of one year for affected individuals.<sup>1</sup> However, the Indian guidelines (2017) prohibit such individuals permanently from donating blood.<sup>10</sup>

HIV is primarily transmitted through direct blood-to-blood contact (with an infectivity rate of approximately 95%) or via sexual intercourse.<sup>1</sup> It is neither contagious nor spread by the faecal-oral route.<sup>1</sup> Therefore, there is no need to defer household contacts.<sup>5</sup>

Deferral intervals of various STIs and HIV are mentioned in Table 2.

#### **• Pre-exposure prophylaxis or post-exposure prophylaxis for HIV**

A person should be deferred if he has received pre-exposure prophylaxis or post-exposure prophylaxis in the last three months, as it interferes with testing for HIV by delaying seroconversion or producing ambiguous results in a positive donor.<sup>4</sup>

#### **• High-risk sexual behaviours**

It is crucial to screen potential blood donors whose sexual behaviour places them at increased risk of acquiring infectious diseases transmitted through blood.<sup>1</sup> High-risk behaviours include having multiple sex partners, engaging in transactional sex (exchange of money or drugs for sex), sex workers and their clients, men having sex with men (MSM) and females having sex with MSM.<sup>1,2</sup> MSM represent the largest subgroup affected by HIV in many developed countries.<sup>1</sup> MSM and blood donation accounts for a special mention.

**Table 2: Deferral intervals of various STIs and HIV as recommended by GOI, WHO and other guidelines**

Sexually Transmitted Infections	Deferral period for patient			Deferral period for sexual contact	
	GOI <sup>2</sup>	WHO <sup>1</sup>	Others	GOI <sup>2</sup>	WHO <sup>1</sup>
<b>Syphilis</b>	One year following the disappearance of the rash or completion of therapy	Permanently	Three months after treatment <sup>5</sup>		Twelve months since last sexual exposure
<b>Gonorrhoea</b>	Permanently	Twelve months following completion of treatment	Three months after treatment <sup>5</sup>		Twelve months since last sexual exposure
<b>Herpes genitalis</b>		Accept, provided no active lesions Symptoms are there If symptomatic, defer 28 days following full recovery	Not a cause for deferral if feeling healthy and well <sup>5</sup>		
<b>Genital warts and Molluscum</b>		Deferral is necessary only if treatment leads to raw areas	Acceptable <sup>5,8</sup>		
<b>Chlamydia</b>			Acceptable <sup>5</sup>		
<b>HIV/AIDS</b>	Permanently if a person is HIV positive, has high-risk sexual behaviour or having symptoms suggestive of AIDS	Permanently		Defer permanently (spouse/partner of PLHA)	Twelve months since the last sexual contact

GOI: Government of India, HIV/AIDS: Human Immunodeficiency Virus/ Acquired Immunodeficiency Syndrome, PLHA: people living with HIV/AIDS.

**• MSM and blood donation**

For a considerable period, many countries upheld a policy of indefinitely deferring blood donations from MSM, citing their higher HIV risk compared to the general population.<sup>1</sup> However, this policy faced criticism in several countries, prompting adjustments that now permit donations from sexually active MSM under certain conditions, such as limitations on the number of sexual partners.<sup>5</sup> On 7 August 2023, the American Red Cross implemented the FDA’s latest guidelines, mandating individual donor assessments for all prospective blood donors irrespective of their gender or sexual orientation.<sup>3,5</sup> This change effectively ended restrictions that had previously prevented sexually active gay and bisexual men from donating blood.<sup>5</sup> Those previously deferred under MSM guidelines can now seek reinstatement by contacting the Red Cross Donor and Client Support Center.<sup>5</sup>

**2) Blood donation and procedures**

Invasive cosmetic procedures like tattooing, piercing, botulinum toxin injections, fillers, thread-lifts, semi-permanent makeup and electrolysis carry a risk of blood-borne infections unless performed under sterile conditions.<sup>1</sup> Blood donation centres should define deferral periods based on the safety and sterility of the procedure, and if it is not possible, individuals should be deferred for 12 months.<sup>1</sup>

Once the raw areas have healed after laser treatment, the donor may be accepted.<sup>4</sup>

Deferral intervals of dermatological procedures are mentioned in Table 3.

**3) Blood donation and medication**

What constitutes a medication deferral period? Drugs and their metabolites in transfused blood can exert unintentional

**Table 3: Deferral intervals of dermatological procedures**

Dermatological procedures	Deferral interval	
	WHO <sup>1</sup>	Others
Invasive cosmetic procedures like tattooing, microblading, piercing (ears, body), semi-permanent makeup and electrolysis	Deferred for 12 months, if safety and sterility of the procedure cannot be ascertained	Acceptable if single-use disposable equipment is used, otherwise defer for three months (concerns about hepatitis) <sup>5</sup>
Botulinum toxin injections	Deferred for 12 months, if safety and sterility of the procedure cannot be ascertained	Defer for a month since last dose <sup>7</sup>
Fillers		Acceptable <sup>7</sup>
Chemical peels		Acceptable <sup>7</sup>
Lasers		Acceptable, <sup>7</sup> only if all wounds have healed and the condition for which laser has been used is not a contraindication for blood donation <sup>4</sup>
Major surgery (done under general/spinal anaesthesia)		Defer for 12 months after recovery <sup>2</sup>

pharmacological effects on the recipient.<sup>1</sup> A medication deferral period signifies the duration during which individuals who have taken certain medications are temporarily ineligible to donate blood.<sup>5</sup> This precautionary measure aims to avert any potential adverse effects on the recipients of donated blood.

Christian had proposed deferral periods based on factors such as the pharmacodynamic and pharmacokinetic properties of the drug as well as the type of blood product used, its plasma content and dilution upon transfusion.<sup>11</sup>



**Table 4: Classification of drugs into four groups based on their pharmacological properties<sup>11</sup>**

Class 1 drugs	Class 2 drugs	Class 3 drugs	Class 4 drugs
Drugs having dose-dependent pharmacokinetics, especially those with teratogenic, embryotoxic or fetotoxic potential	Drugs having genotoxicity	Drugs lacking systemic effects Drugs having little pharmacodynamic potency Drugs with a very high therapeutic index Agents for the replacement of physiological metabolites	Drugs influencing the quality of blood products
Retinoids, Thalidomide, Methotrexate, Mycophenolate mofetil, Finasteride, Dutasteride,	Antineoplastic drugs, that is, cyclophosphamide	Thyroid hormones, nutrients, vitamins, herbal products	Inhibitors of platelet function, that is, acetylsalicylic acid, clopidogrel, ticlopidine

### 1) Pharmacological properties of the drug

To determine the eligibility of drugs for blood donation purposes, they can be categorised based on their pharmacokinetic and pharmacodynamic profiles [Table 4].<sup>11</sup>

### 2) Concentration of drug in donor's plasma and its dilution upon transfusion

The concentration of drugs in a donor's plasma during blood donation depends on various factors, including drug intake, dose, mode of administration, drug preparation and pharmacokinetic properties.<sup>11</sup> Both  $t_{max}$  (the time interval between drug intake and maximum plasma concentration) and  $t_{1/2}$  (the plasma elimination half-life) are crucial here. While  $t_{max}$  is determined by the release and absorption of the drug,  $t_{1/2}$  is affected by the distribution, metabolism and excretion of a drug. Drug concentrations at 3% and 0.000001% of therapeutic levels are considered safe for non-teratogenic and teratogenic drugs, respectively.<sup>12</sup> Based on these safety margins, waiting periods can be calculated based on the drug's pharmacokinetics and with/without blood components to be prepared.

### 3) Type of the blood product used

Blood products can be classified as:

- Blood products containing up to 50 mL/U single-donor plasma (e.g. red blood cell concentrates, pooled plasma).<sup>11</sup>
- Blood products containing more than 50 mL/U single-donor plasma (average 250 mL/U) (e.g. whole blood, fresh frozen plasma, platelet concentrates).<sup>11</sup>

### Basis of deferral interval for a drug

#### 1) Class 1 drugs

Following a period equivalent to  $t_{max} + 5t_{1/2}$ , approximately 97% of the drug is eliminated, resulting in a residual plasma

drug concentration of approximately 3% of the therapeutic level, and further dose-dependent clinical effects are not anticipated at this level.<sup>11</sup> When blood products containing an average of 250 mL plasma from a single donor are transfused into adolescents >12 years of age and adults (5000mL blood volume, 2500mL plasma volume), the donor plasma is diluted about tenfold and the resultant drug level in the recipient's plasma could reach around 10%.<sup>11</sup> To comply with the intended safety margin of 3%, a deferral interval of five plasma elimination half-lives is warranted.<sup>1</sup> In contrast, when blood products containing 50 mL single-donor plasma are transfused into adolescents >12 years of age and adults (5000mL blood volume, 2500mL plasma volume), the donor plasma is diluted about 50-fold and the resultant drug level in the recipient's plasma is close to 2% of the therapeutic drug concentration, and that's why no deferral is needed.<sup>11</sup>

In summary, the transfusion of blood products containing teratogenic, fetotoxic or embryotoxic substances to pregnant women poses minimal risk to the foetus if the final concentration in the mother's plasma remains below 3% of the therapeutic level.<sup>11</sup> This can be ensured either through the dilution of plasma in the recipient or by implementing donor deferral intervals equivalent to  $t_{max} + 5 t_{1/2}$ .<sup>11</sup>

#### 2) Class 2 drugs

In essence, defining threshold levels for genotoxicity presents a challenge due to the potential impact even a single molecule reaching the DNA may have.<sup>11</sup> Thus, rather than focusing on dilution factors post-transfusion, the total dose of the genotoxic drug remains pertinent in this context. A maximum daily intake of up to 1.5 mcg of a genotoxic drug is generally considered to be safe, given the resulting low risk of genotoxicity.<sup>11</sup> For this reason, a deferral period equivalent to  $t_{max} + 24 t_{1/2}$  is warranted as it results in a genotoxic drug concentration of 1 mcg in the donor plasma or 0.000001% of therapeutic levels, which is considered safe.<sup>11,12</sup>

#### 3) Class 3 drugs

They do not require any deferral period.<sup>11</sup>

#### 4) Class 4 drugs

Drugs like non-steroidal anti-inflammatory drugs (NSAIDs) cause reversible inhibition of platelet aggregation. For such drugs, deferral periods of  $t_{max} + 5 t_{1/2}$  are sufficient.<sup>11</sup>

However, the impact of drugs such as aspirin, clopidogrel and ticlopidine extends beyond their elimination from the body as they inhibit platelet aggregation irreversibly.<sup>11</sup> Consequently, the restoration of the normal hemostasis relies on the generation of fresh platelets. Human platelets have an average lifespan of ten days, with approximately 10% of circulating platelets being replenished daily. Hence, such medications necessitate a deferral period of tendays.<sup>11</sup>

Based on the aforementioned discussion, certain drugs and their deferral periods after the last dose are given in Table 5.

Table 5: Certain drugs and their deferral periods after the last dose

Drugs		Deferral period after the last dose		
		GOI <sup>2</sup>	WHO <sup>1</sup>	Others
Retinoids	Isotretinoin*	One month	Twenty-eight days	
	Acitretin**	One month	Three years	Three years <sup>5</sup>
	Etretinate	One month		Not eligible to donate blood any time <sup>5</sup>
5-alpha reductase inhibitors	Finasteride	One month	Twenty-eight days	
	Dutasteride	Six months	Six months	
Immunosuppressive	Methotrexate			One month <sup>7</sup>
	Mycophenolate mofetil			Six weeks <sup>5</sup>
	Prednisone			Two days <sup>7</sup>
Immunoglobulins (IV, SC, IM)		One year		
Thalidomide				One month <sup>5</sup>
Oral Minoxidil				Two days <sup>7</sup>
Antibiotics***		Fourteen days after last dose if donor is well	Fourteen days after completion of treatment	
Systemic treatment for advanced BCC	Vismodegib			Two years <sup>5</sup>
	Sonidegib			Two years <sup>5</sup>
Vitamins and nutritional supplements		Accept		Acceptable <sup>5</sup>
Anti-platelet agents	Aspirin	Three days if blood is used for platelet preparation	Five days	No waiting for donating whole blood Two days if donating platelets by apheresis <sup>5</sup>
	Clopidogrel	Two weeks		
Anticoagulants	Rivaroxaban			Two days <sup>5</sup>
Anti-retroviral drugs	HIV treatment			Not eligible to donate blood at any time <sup>5</sup>
	HIV prevention (PrEP or PEP)			
	Oral			Three months <sup>5</sup>
	Emtricitabine			
	Tenofovir			
	Dolutgravir			
	Raltegravir			
Injectables				Two years <sup>5</sup>
Cabotegravir				
NSAIDs		Accept	Forty-eight hours	
Oral contraceptive		Accept		Accept <sup>5</sup>
Anti-fungal	Ketoconazole	Seven days		
Beta-blockers				Two days <sup>7</sup>
Calcium channel blockers				Accept <sup>7</sup>
Diuretics				Accept <sup>7</sup>
Anti-psychotics				One week <sup>7</sup>
Anti-epileptics		Permanently defer		During use <sup>7</sup>
Insulin		Permanently defer		
Oral anti-diabetic drugs		Accept if there is no alteration in dose within the last four weeks		
Experimental medication				Twelve months <sup>5</sup>
Medication of unknown nature		Till details are available		
Immunisation, Vaccination	Vaccines	Four weeks	Four weeks	Four weeks <sup>5</sup>
	Live attenuated (BCG, Zostavax, chickenpox)			
	Killed/inactivated (HPV, Shingrix)	Fourteen days	Acceptable if symptom-free	Acceptable if symptom-free <sup>5</sup>

(PrEP: Pre-exposure prophylaxis; PEP: Post-exposure prophylaxis; IV: Intravenous; SC: Subcutaneous; IM: Intramuscular; HIV: Human immunodeficiency virus; BCG: Bacillus Calmette-Guerin; HPV: Human Papilloma Virus).

\*Isotretinoin is highly bound to plasma proteins with a reported plasma half-life of up to 167 hours.<sup>13</sup> Given the variability in reported half-life values; the manufacturer advises deferring blood donation for one month after the last dose.

\*\*Acitretin has a relatively short half-life of approximately 49–50 hours. However, ethanol consumption can lead to its re-esterification into etretinate, which has a significantly longer half-life of around 160 days due to its accumulation in adipose tissue.<sup>13</sup> Some non-alcoholic products, including mouthwashes and cough syrups, also contain ethanol to some extent.<sup>13</sup> The precise amount of alcohol intake necessary for acitretin to convert to etretinate remains unclear, as does the influence of timing regarding ethanol ingestion.<sup>13</sup> As a precautionary measure, the FDA recommends a deferral period of three years to mitigate even minimal risks of retinoid embryopathy.<sup>3</sup>

\*\*\*Antibiotics are acceptable, if taken for acne and rosacea.<sup>5</sup>

Corticosteroid therapy needs special mention. Donors should be deferred temporarily if:

1. Topical corticosteroids or tacrolimus/pimecrolimus are applied over large areas (>9%) or received tablets or injections for more than three weeks in the last six months
2. Donor needed systemic steroids for more than six months within the last 12 months.<sup>2</sup>

High-dose steroid therapy leads to immunosuppression, potentially masking infectious and inflammatory conditions that would otherwise disqualify donation.<sup>1</sup> Additionally, prolonged steroid use can lead to temporary adrenal dysfunction.<sup>1</sup> A 12-month waiting period after the final dose is recommended to ensure adrenal gland recovery.<sup>1</sup>

#### Impact of deferral on blood donors

Studies indicate that deferral negatively affects future donor return rates, particularly among first-time donors and those who have deferred for more than a year.<sup>5</sup> It is crucial to advise temporarily deferred donors on when they can donate and encourage their return.<sup>1</sup> Blood donors are less likely to return if the reasons for their deferral are communicated unclearly or unsatisfactorily. Providing counselling to deferred blood donors can enhance their compliance with follow-up medical care.

#### Conclusion

Dermatologists should educate their patients about disclosing their medical history to blood donation centres to minimise the risk of transfusion-transmitted infections and to mitigate potential risks associated with the transfusion of teratogenic or genotoxic drugs in recipients. Through proactive communication and collaboration with blood banks and donation centers, dermatologists can enhance awareness among patients and healthcare providers, fostering a culture of safety and responsibility in blood donation practices.

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