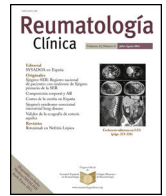




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Special Article

Raoul Dufy: Color and resilience in the fight against rheumatoid arthritis

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ABSTRACT

Raoul Dufy was born in 1877 in the city of Le Havre, France. He showed an early interest in painting and attended the École des Beaux Arts in Paris, where he was influenced by Impressionism and later by Fauvism and Cubism. He achieved a style of his own, marked by colour. His paintings depicted modern life, often with bright colours and energetic scenes of urban and social life. In 1935, he developed severe rheumatoid arthritis, which affected his hands and joints. Despite this, he continued to create art until his death. He underwent numerous medical treatments of the time. In 1950, he was invited to the United States to participate in initial ACTH and cortisone therapies and achieved a significant improvement. He returned to France, but died in 1953 at the age of 76 from an intestinal haemorrhage. His artistic legacy and his strength to face this disease are an inspiration for the future.

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Raoul Dufy: color y resiliencia en la lucha contra la artritis reumatoide

RESUMEN

Raoul Dufy nació en 1877 en la ciudad de El Havre, Francia. Mostró un interés temprano en la pintura y asistió a la École des Beaux Arts en París, donde fue influenciado por el impresionismo y luego por el fauvismo y el cubismo. Consiguió un estilo propio marcado por el color. Sus pinturas representaban la vida moderna, a menudo con colores brillantes y escenas enérgicas de la vida urbana y social. En 1935, desarrolló artritis reumatoide severa, que afectó a sus manos y articulaciones. A pesar de esto, continuó creando arte hasta su muerte. Se le aplicaron numerosos tratamientos médicos de la época. En 1950, viajó invitado a Estados Unidos para participar en las terapias iniciales con ACTH y cortisona consiguiendo una importante mejoría. Regresó a Francia, pero falleció en 1953 a la edad de 76 años debido a una hemorragia intestinal. Su legado artístico y su fortaleza para afrontar esta enfermedad son inspiración para el futuro.

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Introduction

Raoul Dufy was born on the 3rd of June 1877 in the city of Le Havre (France). His parents were musicians, and although he began to practice with the organ, he quickly turned to drawing and paint-

ing. At the age of 18 he began his studies at the Le Havre School of Fine Arts.

In 1900 he moved to Paris to train at the École des Beaux Arts. As he did not like academicism, he began to develop affinities with Impressionism. In 1905 he discovered the work *Luxe, Calme et Volupté* by Matisse. For him it represented a stylistic epiphany and embraced Fauvism. After a few years, he joined the Cubist movement for a very short time. He also devoted himself to drawing and applied art. In 1910 he made woodcuts to illustrate the book *Le Bestiaire*, by Guillaume Apollinaire. In 1925 he exhibited works of

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ceramic at the International Exhibition of Decorative Arts. He did not forget painting, where he stood out for his very personal style, full of audacity and vibrant colours. He created numerous series on a joyful and festive theme of modern life, such as horse races, regattas and festivals. He stood out for his ability to capture the vibrancy and energy of urban life, as well as for celebrating the beauty of nature. In the 1930s his fame grew, and he became known all over the world.

In 1935 he presented a severe rheumatic condition that affected his hands and the rest of his joints, with nocturnal pain and deformity.¹ In 1937 he was invited to paint the mural *La fête électrique* in the Electricity Pavilion at the Paris International Exposition, considered to be the largest up to that time.² In 1940, following the German occupation of France, he withdrew to near Perpignan and in 1948 he travelled to Spain for balneotherapy treatment. In 1950 he received an invitation from Dr. Homburger to treat the disease in the United States. Then, in 1951, he returned to France and settled in Forcalquier, looking for a dry climate. In 1953, at the age of 76, he died due to intestinal bleeding.

His illness

His rather disordered life in Paris led him to suffer from tuberculosis and syphilis. These diseases were treated with arsenic and bismuth until they were cured in 1929. The joint disease appeared in 1935, when he was 58 years old, although he had a history of polyarticular crisis in his youth. This affected his hands and feet symmetrically, with synovitis and a progression of several months, added to which there was also an increase in his sedimentation rate. The clinical symptoms were intermittent but progressive, and in 1940 he moved to the south of the country, looking for a better climate and fleeing the world war. He returned to Paris in 1943, but relapsed in his health and state of mind, destroying part of his work and returning to the south of France.³ He then visited numerous spas and received different treatments. In 1948, a severe outbreak forced him to use crutches and, eventually, a wheelchair. From 1950, thanks to the treatment he received from Dr. Homburger, he began to improve both in pain and function, until his death in 1953.

Rheumatoid arthritis (RA) has been described in Dufy and in other painters such as Renoir, Jawlensky, and Niki de Saint Phalle. It is recognised as an inflammatory, autoimmune and systemic disease. It mainly involves the joints, although it is associated with involvement of other organs.⁴ The aetiology of RA is multifactorial, and both genetic and environmental causes are involved. Among the latter, an association has been identified with the heavy metals present in paint dyes and tobacco. In patients with RA,⁵ elevated levels of cadmium and lead have been found, among other heavy metals.

Dufy used pigments such as red (mercury and cadmium), yellow (arsenic, cadmium and lead) and blue (copper, cobalt, aluminium and manganese). These colours have been frequently employed by painters diagnosed with RA.⁶ In addition, cadmium and mercury sulphide, also present in tobacco, have shown a possible link to the disease.⁷ It should be noted that it was common to smoke and eat while painting, which made it easier to inhale and ingest these toxic compounds.

His treatment

When his symptoms began, Dufy learned to paint with both hands and switched to watercolours. As the disease progressed, he decided to move to Nice and thus escape from the cold and humidity. Later, in 1940, he relocated to Ceret, a city on the border with Spain and had close contact with Dr. Pierre Nicolaum at the Clinique

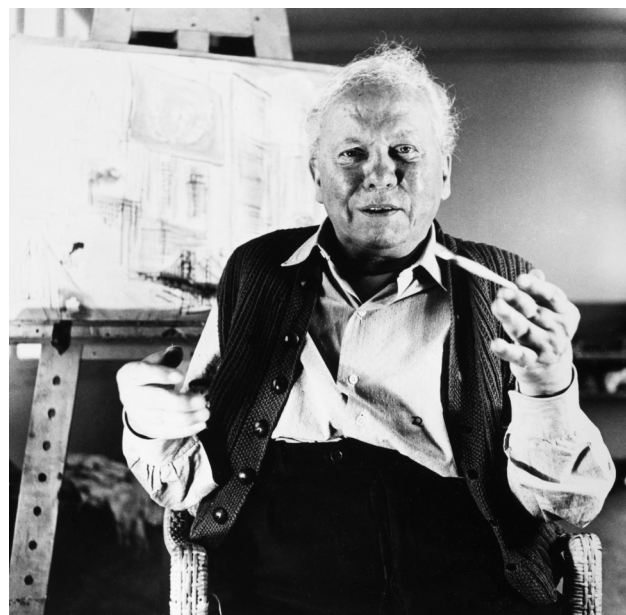


Figure 1. Raoul Dufy (December 1952). Photographed by John Craven. Alamy Stock Photo.

des Platanes (Perpignan). The progression of the disease led him to try out different treatments, some with scientific consistency and others of doubtful usefulness.⁸

Since the 1930s, gold salts have been used for the treatment of arthritis, thanks to the work of Dr. Forestier.⁹ Dr. Nicolau prescribed gold salts to Dufy, from the Lyon laboratories of the famous pioneering brothers in cinematography. Dufy's pain situation improved until 1944, when the treatment had to be repeated. At the same time, he visited French spas (such as Vernet les Bains) or the Spanish one in Caldas de Montbui. From 1945 onwards he relapsed, and doctors were reluctant to increase the dose, due to the risk of side effects.

In 1945 he unsuccessfully tried pyrotherapy under the psychiatrist Julius Wagner-Jauregg.¹⁰ Initially, this treatment was used for syphilitic paralysis by inoculating malaria. The indications were also expanded, including psychiatric diseases or arthritis. In RA, its effect appears to be short-term and is not sustained over time.¹¹ In Dufy's case, the formulation, made with *Haemophilus ducreyi*, was probably used as a pyrotherapy agent.

Dufy also tried treatment with Dr. Bogomomletz's cytotoxic anti-reticular serum¹² obtained by repeated injections of splenic and medullary cells from horses. This was administered subcutaneously and presumably acted by stimulating the connective system. The indications were varied,¹³ including RA. In Dufy it was not effective, and he achieved some improvement only in spa treatments, which included thermal cures, such as Dr. Salmanoff's.¹⁴

In 1950, Dr. Freddy Homburger,¹⁵ an admirer of Dufy, contacted him after reading an article in *Life* magazine. Homburger was starting to use adrenocorticotrophic hormone (ACTH) and cortisone manufactured in Boston (USA), and offered to participate in Dufy's treatment programme. Dufy's doctor was aware of Dr. Hench's hopeful results at the Mayo Clinic with the use of cortisone,¹⁶ and encouraged the painter to accept the invitation. Dufy arrived in a poor physical state, walking on crutches and with severe limitation and pain, unable to lift food to his mouth, as well as with deformities in the hands and feet (Fig. 1). Treatment was initiated with intramuscular (i.m.) ACTH and later with ACTH-associated cortisone acetate. The dose was gradually decreased and the patient then passed to oral doses, associated with buffered aspirin, upon discharge.

On admission, his gingivitis had been treated, his electrolyte control and bone metabolism were regularised (with i.m. testosterone propionate) and physiotherapy treatment began. During this period, Dufy presented several complications, such as heartburn, diarrhoea, fluid retention, aggravation of osteoporosis and a gluteal abscess. The latter was related to the i.m. cortisone and produced by a *Staphylococcus aureus* resistant to penicillin and streptomycin. Treatment was attempted with repeated aspiration and eventually surgical drainage was required, associated with chloramphenicol and tetracycline.

After treatment on his North American journey, he returned to Paris. He was able to paint, moved with little help and was independent for the activities of daily life, hoping to continue his work for years.¹⁷ He soon settled in the southern city of Folcalquier. On the 23rd of March 1953, he died of an intestinal haemorrhage. At that time, he was taking 35 mg a day of cortisone.

His work

In the early years, he was influenced by the Impressionists, but the first movement that he followed was Fauvism. This new trend postulated that colour was above form, perspective or drawing, approaching abstraction. The colours used were pure and came straight out of the paint tube. These painters were committed to outdoor work which, in the case of Dufy, showed life in fishing villages and traditional festivals, reflecting his feelings through colour. After few years in this movement, he embraced Cubism. Considered the first avant-garde movement, Cubism converted nature into geometrical shapes with different views on different planes; perspective was lost and colour was diminished. This movement did not convince him either, and he sought his own style based on colour on a white background, with objects sketched with undulating lines. The vividness of the colour surpassed even the contours of his drawing.

RA affected Dufy's artistic technique, as it did in the case of other artists affected by rheumatic diseases.^{18,19} Renoir had to limit his workspace, creating a stretcher frame so that he could move the canvas and paint with short, diluted brushstrokes. Jawlensky used both hands to hold the brush, reduced the size of his works, darkened the colour, and the lines eventually became only vertical and horizontal, increasing the introspection of his works. Niki de Saint Phalle had to delegate the creation of large-scale sculptures to her team. Paul Klee, affected by systemic sclerosis, simplified his brushstroke, which became thicker; he intensified the symbolism with greater contrast of colours, and some works of his reflected his physical and mental suffering.²⁰ In our case, Dufy switched to watercolour, which was a technique which required less physical effort. The paintings were reduced in size; the colours and contours were softened with more imprecise strokes, and he began to distort the way he drew his hands, projecting the deformity of his own disease²¹ (Fig. 2). In spite of everything, he worked until the last days of his life, having colour as a mainstay of his work. As he said, "Colour represents the light that forms and gives life to the whole because light is life; it is the soul of colour".²²

In conclusion, Raoul Dufy was an exceptional artist known for his vibrant and colourful style. Throughout his career he explored various different techniques, maintaining his passion for colour and modern life, despite the limitation caused by his disease. His work captured the energy of cities with great elegance and has left a lasting mark on art, inspiring generations. His struggle also illustrates the beginnings of RA therapy in the 20th century.



Figure 2. Non-atelier model, 1942. Oil on cardboard. Donation by João de Lacerda. MDC254-1957. Caramulo Museum Collection, Portugal.

Declaration of competing interest

The authors declare that they have no conflict of interest.

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