

LEONARDO DA VINCI AND ANATOMY, THE MECHANICS OF LIFE



Temporary exhibition

from 9 June
to 17 September
2023

Leonardo da Vinci, folio of the Windsor
codex (facsimile), *The fetus in the womb*
© Château du Clos Lucé - Parc Leonardo
da Vinci

The exhibition, presented at Clos Lucé, takes visitors right to the heart of Leonardo's years as an anatomist and the emergence of new scientific methods such as dissection. Thirty years in a relentless quest to penetrate the mysteries of life and decipher the human body in its mechanics, its movement, and the functions of the organs.

Through an educational and multidisciplinary tour combining period books, sixteenth-century original drawings of Leonardo's disciples, facsimiles, anatomical models, dissection instruments, installations and animated 3D video, visitors will discover the anatomy of the human body in Leonardo's footsteps.

THE EXHIBITION PATH

From early studies focused on superficial anatomy and marked by his reading of the works of Galen to his dissection of cadavers at the turn of the sixteenth century, Leonardo da Vinci's anatomical studies represent one of the most important contributions to the science of anatomy during the Renaissance. These studies were intended to be used for a treatise on anatomy that Leonardo never published. By revealing the secrets of the body, which went hand in hand with his discovery of the secrets of nature and the universe, Leonardo da Vinci set himself an endless challenge.

Visitors are led through the exhibition following the major themes of Leonardo's research: the analogy between the microcosm of the human body and the macrocosm of the body of the earth, the proportions of the human body, the mechanics of the body (bones, muscles and sinews), likening it to a machine, the nature of the senses (especially vision) and all the bodily functions (digestion, breathing, blood circulation, reproduction). The exhibition concludes by looking at the close links between Leonardo's anatomical research and his paintings.



Leonardo da Vinci, folio of the Windsor codex (facsimile),
The superficial anatomy of the shoulder and neck
© Château du Clos Lucé - Parc Leonardo da Vinci



Leonardo da Vinci, folio of the Windsor codex (facsimile),
The bones of the foot, and the shoulder
© Château du Clos Lucé - Parc Leonardo da Vinci

How was Leonardo able to reproduce the human body with such precision?

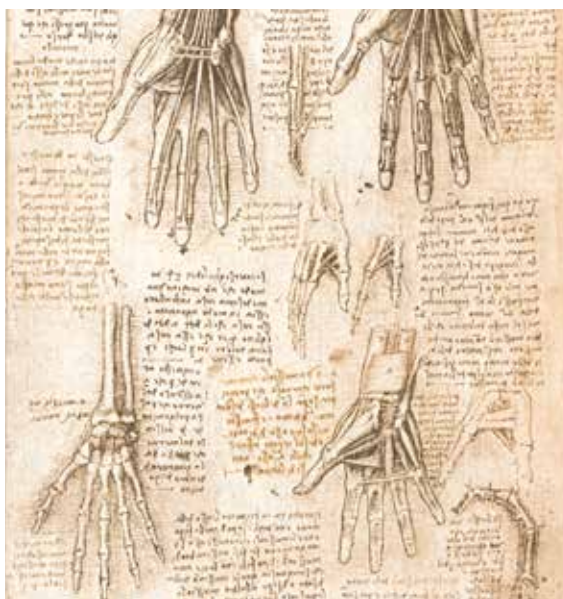
Convinced of the importance of a quantitative approach to unlock the secrets of the human body, Leonardo himself developed an original method of dissection, proceeding in layers or sections, or in views around the object (a sculptor’s method), before presenting everything together as a whole.

Contrary to popular opinion, Leonardo did not carry out his dissections in secret, but in hospitals, and in complete agreement with the political and religious authorities, at least until his materialistic ideas came into conflict with papal bulls, particularly with regard to embryology.

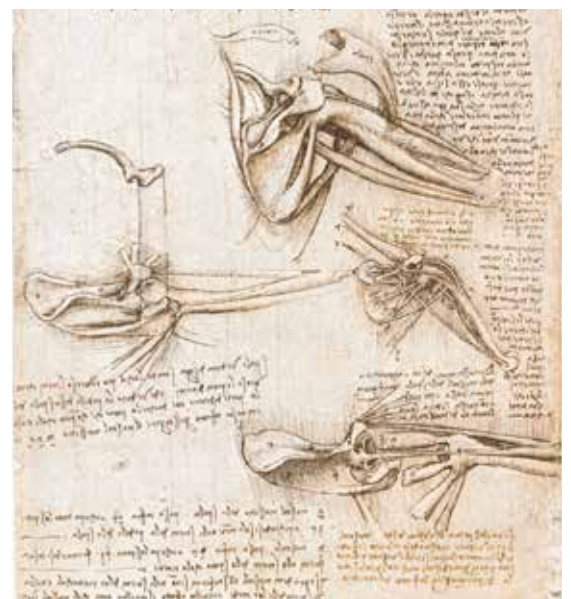
“

And whatever you do for this side of the hand you should do the same for the other three sides, that is the front of the hand or palmar side, the dorsal side and the sides of the extensor and the flexor muscles. In the chapter on the hand you will make forty demonstrations; and you should do the same for each limb. In this way you will attain complete knowledge.”

Leonardo da Vinci, extract from the Windsor codex (RL 1906r)



Leonardo da Vinci, folio of the Windsor codex (facsimile),
The bones, muscles and tendons of the hand
© Château du Clos Lucé - Parc Leonardo da Vinci



Leonardo da Vinci, folio of the Windsor codex (facsimile),
The bones and muscles of the shoulder
© Château du Clos Lucé - Parc Leonardo da Vinci

Leonardo's methods of dissection are deciphered through innovative interplay between his anatomical drawings and modern medical imagery, revealing their great precision for the time. CT or MRI scans are compared with the famous plates from the Royal Collection in Windsor and the Leicester and Huygens codices (facsimiles).

Leonardo's art reveals an incomparable stylisation that brings the necessary clarity to his didactic illustrations. It is easy to see the sculptural qualities in the studies derived from three-dimensional dissections, particularly his representations of the foetus, the skull and the shoulder.

For a deeper understanding of Leonardo's working methods, the tour also includes a completely reconstructed dissection room which will be sure to amaze younger visitors.



Leonardo da Vinci, folio of the Windsor codex (facsimile),
The layers of the scalp, and the cerebral ventricles
 © Château du Clos Lucé - Parc Leonardo da Vinci



Top: MRI view of a skull and brain
 © HIA de Brest



Bottom: Skull specimen
 © C.H.U de Brest

FROM ANATOMICAL DRAWINGS TO WORKS OF ART

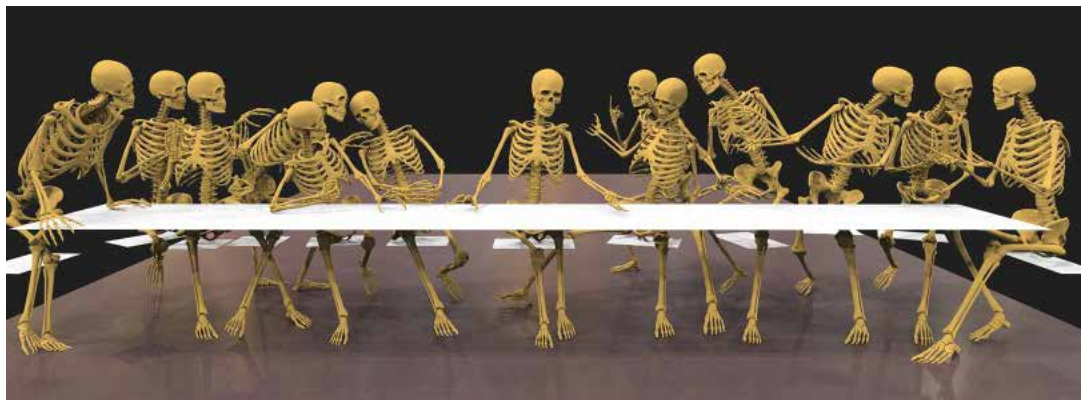
The last section focuses on the close links between the scientist's view and that of the artist, when anatomical accuracy goes hand in hand with artistic beauty. This unremitting study of the living serves his relentless quest in painting: to paint the vibrations of life in order to come closer to its mysteries.

A video produced by the Laboratory of Medical Information Processing (LaTIM) in Brest shows the 3D skeletons of the apostles at *The Last Supper* in order to highlight the position of the bodies. Each image scrupulously respects the attitude of the figures. Visitors will, therefore, be able to appreciate Leonardo's knowledge of biomechanics and how it is reflected in his work as a painter.



Digital restoration of *The Last Supper* by Kiyoshi Bando
© Joël Savéan, Christian Lefèvre, François Gaucher

5



3D modeling of *The Last Supper* from the digitized version of Kiyoshi Bando
© Joël Savéan, Christian Lefèvre, François Gaucher

Leonardo chose a specific temporal context for his composition, the moment when Jesus said: «One of you will betray me» (viewers can even see the still half-open lips of Jesus finishing his words), hence the state of astonishment of the 12 apostles, each one reacting in his own way, with his own emotion and gestures, which explains the broad range of spontaneous attitudes.

Among the figures in *The Last Supper*, Bartholomew, located at the extreme left of the work, is offended and rises abruptly, leaning forward in a posture made possible by a powerful contraction of the posterior triangle of the neck, as evidenced by his clearly visible musculature. The combined contraction of the anterior and posterior triangles of the neck causes a look of transfixed nervous tension that is clearly visible in the figure of Judas, a dark, unattractive figure (with a protruding jaw) who, realising that Jesus is talking about him, reacts with a sudden backward movement.

Leonardo da Vinci pushes his art to the limits, enabling the emotions of the apostles to be clearly seen in their physical postures.

Echoing this, a monumental installation by the artist Ivana Gayitch, presenting a version of *The Last Supper* predominated by the hands of the apostles and the meal table, closes the exhibition. These wax hands take over the speech, emotions and unspoken words of the figures. Each of them plays its own part in a theatrical production.

Ivana Gayitch is a Franco-Serbian artist born in 1957 in Paris. She trained in sculpture under Dino Quartana, and took drawing and graphic design courses at the École Estienne. In her sculpture, she explores the traditional materials of her art such as clay, stone and plaster. The wax in The Last Supper is a new experience.



The Last Supper installation © Ivana Gayitch

THE CURATORS

Dominique Le Nen

Dominique Le Nen is a university professor and surgeon. He is the co-founder of SOS Mains at the university hospital (CHRU) in Brest. A doctor of Epistemology, History of Science and Technology, and associate researcher at the François Viète Centre in Nantes/Brest, he has devoted numerous conferences, symposia, articles and books to the theme of «science and art», including *L'anatomie au creux des mains, au confluent des sciences et de l'art* (L'Harmattan, 2007), *Léonard de Vinci, un anatomiste visionnaire* (L'Harmattan, 2010) and *Léonard de Vinci, le corps au travers des sciences et de l'art*, co-authored with Pascal Briost (records of the "Léonard de Vinci" colloquium, 5-7 December 2019, Brest, L'Harmattan, 2022).

Leonardo stands as the undisputed precursor of anatomical, descriptive and functional knowledge, and his mastery of drawing and painting, 'languages' that he places at the pinnacle of any achievement - cosa mentale -, entitle him to be cited among the best artists to have reproduced organs such as the hand, in spite of their being so difficult to recreate. Dominique Le Nen

Pascal Briost

Pascal Briost, Professor of Modern History at the University of Tours and member of the Centre for Advanced Renaissance Studies (CESR), has been working on Leonardo da Vinci for over twenty years and is an advisor to the Château du Clos Lucé in Amboise. In this capacity, he was involved in the development of the Leonardo da Vinci Architect Gallery, inaugurated in June 2021. In 2015, he also organised an international event called «Marignan 2015», a re-enactment based on the festivities given in 1518 by King Francis I in Amboise (<https://renaissance-transmedia-lab.fr/rtl4/>).

Over the years, Pascal Briost's research has led to a better understanding of Leonardo da Vinci's work in Romorantin and more generally of his activities in France from 1516 to 1519. He has published a number of books and articles on the subject, such as *Léonard de Vinci, homme de guerre* (Alma, 2013), *Les Carnets de Léonard de Vinci* (Gallimard, 2019) and *Les Audaces de Léonard de Vinci* (Stock, 2019).

EXHIBITION CATALOGUE

Leonardo da Vinci and Anatomy, the Mechanics of Life

192 pages - Format: 24x28 cm - French & English

Price: € 29

Editions Skira

Contributors :

- Pascal Briost, Professor of Modern History at the University of Tours and member of the Centre for Advanced Renaissance Studies (CESR)
- Bertrand Debono, neurosurgeon at the Centre Francilien du Dos (Paris-Versailles), President of the French Society of Private Neurosurgeons
- François Gaucher, surgeon at the Centre Hospitalier Général in Quimper
- Laetitia Guezennec, Program Account Senior Manager at Dassault Systèmes' 3DEXPERIENCE Lab
- Maëlyss Haddjeri, doctoral student in Art History at the Ecole Pratique des Hautes Etudes
- Matthew Landrus, Research Fellow at Wolfson College, University of Oxford, specialist in the history of art and science in Italy
- Domenico Laurenza, Associate Professor of Art History at the University of Cagliari
- Christian Lefèvre, Professor of Anatomy at the Faculty of Medicine in Brest
- Dominique Le Nen, University Professor - Surgeon at Brest University Hospital (CHRU)
- Jean-Jacques Monsuez, cardiologist at the René-Muret AP-HP hospital
- François Rozet, senior surgeon in the Department of Urology at the Institut Mutualiste Montsouris in Paris
- François Saint Bris, President of the Château du Clos Lucé - Parc Leonardo da Vinci
- Joël Savéan, technician at the Medical Information Processing Laboratory in Brest
- Anna Sconza, lecturer in Italian Studies at Université Sorbonne Nouvelle Paris 3
- Frank Zöllner, Professor of Art History at the University of Leipzig

VISUALS AVAILABLE FOR THE PRESS

In addition to the images of the presentation text



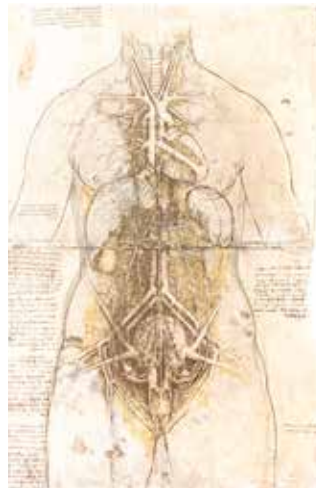
1.



2.



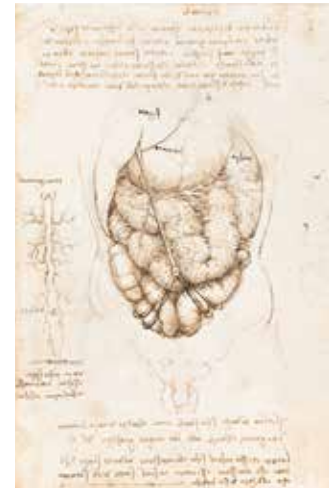
3.



4.



5.



6.

1. Leonardo da Vinci, folio of the Windsor codex (facsimile), *The vertebral column* © Château du Clos Lucé - Parc Leonardo da Vinci
2. Leonardo da Vinci, folio of the Windsor codex (facsimile), *The digestive system* © Château du Clos Lucé - Parc Leonardo da Vinci
3. Leonardo da Vinci, folio of the Windsor codex (facsimile), *The muscles of the shoulder, arm and neck* © Château du Clos Lucé - Parc Leonardo da Vinci

4. Leonardo da Vinci, folio of the Windsor codex (facsimile), *The cardiovascular system and principal organs of a woman* © Château du Clos Lucé - Parc Leonardo da Vinci
5. Leonardo da Vinci, folio of the Windsor codex (facsimile), *The leg muscles and bones of man and horse* © Château du Clos Lucé - Parc Leonardo da Vinci
6. Leonardo da Vinci, folio of the Windsor codex (facsimile), *Abdomen* © Château du Clos Lucé - Parc Leonardo da Vinci



1.



2.



3.



4.



5.



6.



7.

1. Leonardo da Vinci, folio of the Windsor codex (facsimile), *The superficial anatomy of the shoulder and neck*
© Château du Clos Lucé - Parc Leonardo da Vinci
2. Leonardo da Vinci, folio of the Windsor codex (facsimile), *The male and female reproductive systems*
© Château du Clos Lucé - Parc Leonardo da Vinci
3. Leonardo da Vinci, folio of the Windsor codex (facsimile), *The cranium sectioned* © Château du Clos Lucé - Parc Leonardo da Vinci
4. Leonardo da Vinci, folio of the Windsor codex (facsimile), *The skull sectioned* © Château du Clos Lucé - Parc Leonardo da Vinci
5. Leonardo da Vinci, folio of the Windsor codex (facsimile), *The skull sectioned* © Château du Clos Lucé - Parc Leonardo da Vinci
6. Leonardo da Vinci, folio of the Windsor codex (facsimile), *The bones of the arm and leg* © Château du Clos Lucé - Parc Leonardo da Vinci
7. Leonardo da Vinci, folio of the Windsor codex (facsimile), *The muscles of the shoulder and arm*
© Château du Clos Lucé - Parc Leonardo da Vinci



1.



2.



3.



4.



5.



6.

1. Leonardo da Vinci, folio of the Windsor codex (facsimile), *The foetus, and the muscles attached to the pelvis* © Château du Clos Lucé - Parc Leonardo da Vinci
2. Leonardo da Vinci, folio of the Windsor codex (facsimile), *The lungs* © Château du Clos Lucé - Parc Leonardo da Vinci
3. Leonardo da Vinci, folio of the Windsor codex (facsimile), *The cranial nerves* © Château du Clos Lucé - Parc Leonardo da Vinci

4. Leonardo da Vinci, folio of the Windsor codex (facsimile), *The muscles of the leg* © Château du Clos Lucé - Parc Leonardo da Vinci
5. Leonardo da Vinci, folio of the Windsor codex (facsimile), *The muscles of the face and arm, and the nerves and veins of the hand* © Château du Clos Lucé - Parc Leonardo da Vinci
6. Leonardo da Vinci, folio of the Windsor codex (facsimile), *The bladder* © Château du Clos Lucé - Parc Leonardo da Vinci



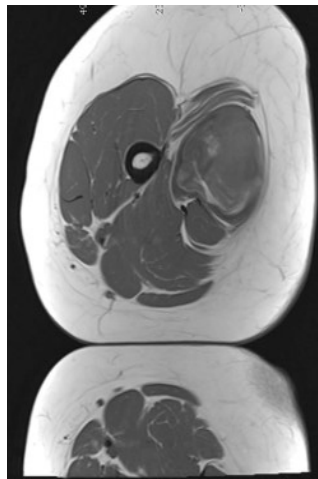
1.



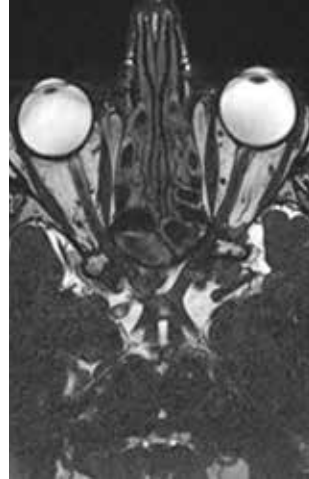
2.



3.



4.



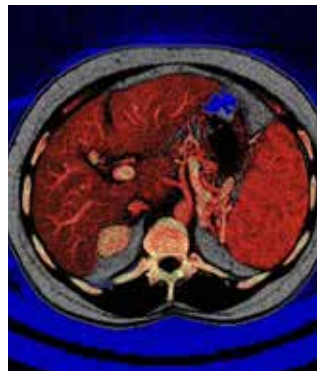
5.



6.



7.



8.



9.

1. CT image of pelvic © C.H.U de Brest
2. Cranium sectioned © C.H.U de Brest
3. CT image of skull © C.H.U de Brest
4. MRI section of the thigh © C.H.U de Brest
5. MRI image of inside skull © HIA de Brest

6. CT image of chest © Hôtel-Dieu de Pont-l'Abbé
7. CT image of foot and ankle joint © C.H.U de Brest
8. Abdomen CT slice © C.H.U de Brest
9. CT image of pelvic © C.H.U de Brest

PRACTICAL INFORMATION

Château du Clos Lucé –
Parc Leonardo da Vinci
2 rue du Clos Lucé - 37400 Amboise
Tél. : + 33 (0)2 47 57 00 73
infos@vinci-closluce.com
www.vinci-closluce.com

HOW TO GET TO CLOS LUCÉ

Motorways A 10 (exit 18)
and A 85 (exit 11)
Trains from Paris: Paris Montparnasse -
Saint-Pierre-des-Corps (1h)
Paris Austerlitz– Amboise (1h50)

OPENING HOURS

Open all year round
(except 25 December & 1 January)
Jan.: 10.00 am - 6.00 pm,
Feb. - June: 9.00 am - 7.00 pm,
July - Aug.: 9.00 am - 8.00 pm,
Sept. - Oct.: 9.00 am - 7.00 pm,
Nov. - Dec.: 9.00 am - 6.00pm

PRICE

Adult entry fee: €18.00
Children (7 - 18 years old): €12.50
Students: €12.50
Family ticket 2 adults + 2 children: €49.00
Family ticket 2 adults + 3 children: €52.00
Family ticket 2 adults + 4 children: €54.00
Concessions (unemployed, CCCOD
Tours or CCCOD LEPASS ticket holders):
€16.00
Persons of reduced mobility: €8.00

Exhibition supplements: 5€ adults; 3€
concessions; 1€ 7-18 year olds and students;
free for children under 7 years old

MEDIA CONTACTS

C LA VIE - L'AGENCE

Ingrid Cadoret

Director

ingrid@c-la-vie.fr

+33(0)6 88 89 17 72

Maylis Nicodème

Press Officer

maylis.nicodeme@c-la-vie.fr

+33 (0)7 86 50 58 71

14

CHÂTEAU DU CLOS LUCÉ - PARC LEONARDO DA VINCI

Nina Germain

Communications Officer

nina.germain@vinci-closluce.com

+33(0)6 47 47 31 87

Diane Junqua

Director of Communications,

Programming and Sponsorship

diane.junqua@vinci-closluce.com

+33(0)6 52 44 68 46