

The Annual General Meeting of Bicycle Therapeutics plc will be held at **Building 900 Babraham Research Campus, Babraham, Cambridge, CB22 3AT, United Kingdom** on **June 28, 2021** at **1:00 p.m. London time (8:00 a.m. Eastern Daylight Time)**. Based on the current timings indicated by the U.K. government for the removal of COVID-19 related restrictions, it is expected that ordinary shareholders will be able to attend the Annual General Meeting in person. However, the situation may change significantly between now and the date of the Annual General Meeting.

Shareholder Reference Number

Please detach this portion before mailing this proxy form.

Form of Proxy - Annual General Meeting to be held on June 28, 2021



Complete your Proxy online...It's fast, easy and secure!

www.investorcentre.co.uk/eproxy

You will be asked to enter the Control Number, Shareholder Reference Number (SRN) and PIN shown opposite and agree to certain terms and conditions.

Control Number: 917151

SRN:

PIN:

View the Annual Report online: <https://investors.bicycletherapeutics.com>Register at www.investorcentre.co.uk - elect electronic communications & manage your shareholding online!

To be effective, all proxy appointments must be filed with the Company's Registrar at:

Computershare Investor Services PLC, The Pavilions, Bridgwater Road, Bristol BS99 6ZY by June 24, 2021 at 1:00 p.m. London time (8:00 a.m. Eastern Daylight Time).

Explanatory Notes:

- Every holder has the right to appoint some other person(s) of their choice, who need not be a shareholder, as his proxy to exercise all or any of his rights, to attend, speak and vote on his behalf at the meeting. If you wish to appoint a person other than the Chairman of the meeting, please insert the name of your chosen proxy holder in the space provided (see reverse). Please note, however, that if you do not appoint the Chairman of the meeting as your proxy in the event that ordinary shareholders are not permitted to attend the Annual General Meeting in person your proxy will not be permitted to attend the Annual General Meeting and vote on your behalf. If the proxy is being appointed in relation to less than your full voting entitlement, please enter in the box next to the proxy holder's name (see reverse) the number of shares in relation to which they are authorized to act as your proxy. If returned without an indication as to how the proxy shall vote on any particular matter, the proxy will exercise his discretion as to whether, and if so how, he votes (or if this proxy form has been issued with respect to a designated account for a shareholder, the proxy will exercise his discretion as to whether, and if so how, he votes).
- To appoint more than one proxy, an additional proxy form(s) may be obtained by contacting the Registrar's helpline at 0370 703 0031 or you may photocopy this form. Please indicate in the box next to the proxy holder's name (see reverse) the number of shares with respect to which they are authorized to act as your proxy. Please also indicate by marking the box provided if the proxy instruction is one of multiple instructions being given. All forms must be signed and should be returned together in the same envelope.
- The 'Vote Withheld' option is provided to enable you to abstain on any particular resolution. However, it should be noted that a 'Vote Withheld' is not a vote in law and will not be counted in the calculation of the proportion of the votes 'For' and 'Against' a resolution.
- Pursuant to Regulation 41 of the Uncertificated Securities Regulations 2001, entitlement to attend and vote at the meeting and the number of votes which may be cast thereat will be determined by reference to the Register of Members of the Company at 6:00 p.m. London time (1:00 p.m. Eastern Daylight Time) on June 24, 2021. Changes to entries on the Register of Members after that time shall be disregarded in determining the rights of any person to attend and vote at the meeting.
- To appoint one or more proxies or to give an instruction to a proxy (whether previously appointed or otherwise) via a designated voting platform, any such messages must be received by the issuer's agent prior to the specified deadline within the relevant system. For this purpose, the time of receipt will be taken to be the time (as determined by the timestamp generated by the relevant designated voting platform) from which the issuer's agent is able to retrieve the message. The Company may treat as invalid a proxy appointment sent via a designated voting platform in the circumstances set out in Regulation 35(5)(a) of the Uncertificated Securities Regulations 2001.
- The above is how your address appears on the Register of Members. If this information is incorrect please call the Registrar's helpline on 0370 703 0031 to request a change of address form or go to www.investorcentre.co.uk to use the online Investor Centre service.
- Any alterations made to this form should be initialled.
- The completion and return of this form will not preclude a Member from attending the Meeting and voting in person.

Kindly Note: This form is issued only to the addressee(s) and is specific to the unique designated account printed hereon. This personalized form is not transferable between different: (i) account holders; or (ii) uniquely designated accounts. The Company and Computershare Investor Services PLC accept no liability for any instruction that does not comply with these conditions.

All Named Holders

Poll Card

To be completed **only** at the AGM.

Ordinary Resolutions

- | | For | Against | Vote
Withheld |
|---|--------------------------|--------------------------|--------------------------|
| 1. To re-elect Kevin Lee as a director. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. To re-elect Jose Carlos Gutierrez-Ramos as a director. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. To ratify the appointment of PricewaterhouseCoopers LLP, a limited liability partnership organized under the laws of England, as our U.S. independent registered public accounting firm for the year ending December 31, 2021. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. To re-appoint PricewaterhouseCoopers LLP, a limited liability partnership organized under the laws of England, as our U.K. statutory auditors, to hold office until the conclusion of the next annual general meeting of shareholders. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. To authorize the Audit Committee to determine our U.K. statutory auditors' remuneration for the year ending December 31, 2021. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

- | | For | Against | Vote
Withheld |
|---|--------------------------|--------------------------|--------------------------|
| 6. To receive and adopt our U.K. statutory annual accounts and reports for the year ended December 31, 2020 (the "2020 U.K. Annual Report"). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. To approve the directors' remuneration report for the year ended December 31, 2020 (excluding the directors' remuneration policy). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. To authorise the directors to allot shares in the Company or to grant rights to subscribe for or to convert any security into shares in the Company up to a maximum aggregate nominal amount of £250,000.00. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Special Resolution

- | | For | Against | Vote
Withheld |
|---|--------------------------|--------------------------|--------------------------|
| 9. To disapply pre-emption rights in respect of the allotment of equity securities up to a maximum aggregate nominal amount of £250,000.00. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Signature

In the case of a Corporation, a letter of representation will be required (in accordance with S323 of the Companies Act 2006) unless this has already been filed at registration.

Form of Proxy

Please complete this box only if you wish to appoint a third party proxy other than the Chairman of the Meeting*.

Please leave this box blank if you want to select the Chairman of the Meeting. Do not insert your own name(s).

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I/We hereby appoint the Chairman of the Meeting OR the person indicated in the box above as my/our proxy to attend, speak and vote in respect of my/our full voting entitlement** on my/our behalf at the Annual General Meeting of Bicycle Therapeutics plc to be held at **Building 900 Babraham Research Campus, Babraham, Cambridge, CB22 3AT** on **June 28, 2021 at 1:00 p.m. London Time** (8:00 a.m. Eastern Daylight Time) and at any adjourned meeting.

* You are urged to appoint the Chairman of the Meeting as your proxy. Please note that if you do not appoint the Chairman of the Meeting as your proxy in the event that ordinary shareholders are not permitted to attend the Annual General Meeting in person your proxy will not be permitted to attend the Annual General Meeting and vote on your behalf.

** For the appointment of more than one proxy, please refer to Explanatory Note 2 (see front).

Please mark here to indicate that this proxy appointment is one of multiple appointments being made.

Please use a **black** pen. Mark with an **X** inside the box as shown in this example.



Ordinary Resolutions

- | | For | Against | Vote
Withheld |
|---|--------------------------|--------------------------|--------------------------|
| 1. To re-elect Kevin Lee as a director. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. To re-elect Jose Carlos Gutierrez-Ramos as a director. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. To ratify the appointment of PricewaterhouseCoopers LLP, a limited liability partnership organized under the laws of England, as our U.S. independent registered public accounting firm for the year ending December 31, 2021. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. To re-appoint PricewaterhouseCoopers LLP, a limited liability partnership organized under the laws of England, as our U.K. statutory auditors, to hold office until the conclusion of the next annual general meeting of shareholders. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. To authorize the Audit Committee to determine our U.K. statutory auditors' remuneration for the year ending December 31, 2021. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

- | | For | Against | Vote
Withheld |
|---|--------------------------|--------------------------|--------------------------|
| 6. To receive and adopt our U.K. statutory annual accounts and reports for the year ended December 31, 2020 (the "2020 U.K. Annual Report"). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. To approve the directors' remuneration report for the year ended December 31, 2020 (excluding the directors' remuneration policy). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. To authorise the directors to allot shares in the Company or to grant rights to subscribe for or to convert any security into shares in the Company up to a maximum aggregate nominal amount of £250,000.00. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Special Resolution

- | | For | Against | Vote
Withheld |
|---|--------------------------|--------------------------|--------------------------|
| 9. To disapply pre-emption rights in respect of the allotment of equity securities up to a maximum aggregate nominal amount of £250,000.00. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

I/We instruct my/our proxy as indicated on this form. Unless otherwise instructed the proxy may vote as he or she sees fit or abstain in relation to any business of the Meeting.

Signature

Date

DD / MM / YY

In the case of a corporation, this proxy must be given under its common seal or be signed on its behalf by an attorney or officer duly authorized, stating their capacity (e.g. director, secretary).

